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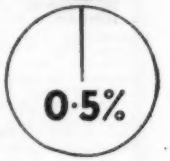

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ORIGINAL ARTICLES

DISSECTION LOBECTOMY

BY ROBIN S. PILCHER, M.S. Lond., F.R.C.S.
PROFESSOR OF SURGERY IN THE UNIVERSITY OF LONDON; DIRECTOR OF THE SURGICAL UNIT, UNIVERSITY COLLEGE HOSPITAL, LONDON; SURGEON, E.M.S.; AND

EVA BYRDE, M.B. Camb., D.A.
ANÆSTHETIST TO THE SURGICAL UNIT AND TO THE E.M.S.

THE removal of a septic lung lobe by the tourniquet method although giving results that show progressive improvement falls far short of perfection as an operation, being incomplete, dirty and uncertain. The removal of whole lungs by the dissection method suggested to us that a similar technique could be devised for lobectomy with a view to securing radical removal of the disease, safer closure of the hilar structures, and less risk of empyema and delayed re-expansion of remaining lobes. Our first experience of dissection lobectomy having been encouraging we are reporting the cases, not as any proof of the superiority of the technique over the tourniquet method but to demonstrate its practicability in the hope that others will give it a trial. Three cases have been completed, two with a good result, the third being a modified success. A fourth case in which the operation was intended ended fatally, the child dying in an early stage of operation during separation of adhesions. This fatality must be ascribed to an error of judgment in the choice of case rather than in the type of operation. The patient was known to be a poor risk and a staged operation was intended.

Blades and Kent [1] have recently reported a series of dissection lobectomies and in the discussion of their paper other surgeons reported favourable experiences. These surgeons point out certain anatomical difficulties of the method, notably the possibility of narrowing the bronchi of remaining lobes by ligature of the bronchus to be removed. As Janes remarked in the discussion, however, this accident can occur in the tourniquet method and he suggested it as a cause of failure of expansion of remaining lobes. Our experience in case 2 has a bearing on this point. Preoperative bronchoscopy is advised by Blades and Kent to determine the length of bronchus available for ligature.

Our three cases were all children with lower-lobe bronchiectasis of long standing; two of them had been under observation for some years, one having been previously rejected as unsuitable for operation. They were investigated by bronchoscopy and bronchography and prepared for operation by a course of postural drainage and breathing exercises. The condition of the nasal sinuses had been examined and in one case bilateral antral drainage had been done.

TECHNIQUE AND MANAGEMENT

The technique of the operation will not be described in full but important details about which opinions differ merit discussion.

Anæsthetic.—Premedication with paraldehyde (½ drachm per stone) by rectum was given to each patient 45 min. before operation. With a continuous-flow Boyle's gas-oxygen apparatus anæsthesia was induced with nitrous oxide, oxygen and ether, and a MacGill's endotracheal tube was passed through the nose without preliminary spraying of the nose and throat. The trachea was kept free of secretion by suction through the endotracheal tube. After each period of suction the expiratory valve was closed and the patient allowed to rebreathe to compensate for the deflation. No attempt was made to occlude the bronchus on the affected side. Preparations were made for bronchoscopic aspiration but in none of the cases was this necessary. In the second and third cases early closure of the bronchus relieved us of anxiety about spill-over of secretion. Before closure of the pleura the upper lobe was expanded with a mixture of nitrous oxide 80%, oxygen 15% and carbon dioxide 5%, for it was found that oxygen alone was too rapidly absorbed. Carbon dioxide was added to enhance the inflation by increasing the depth of respiration. It may be objected that inflation of the lung may drive secretion into the bronchi and cause atelectasis, but we do not think this objection is valid if the inflation is gradual and the pressure low. It is important to know that the bronchus to the upper lobe is not constricted and it might be worth while to inflate immediately after the bronchial ligature to settle this point. In our second case inflation failed and bronchoscopy was performed to find the cause. In this case re-expansion was delayed and was probably due to an error in technique.

Exposure and general procedure.—The lateral position was used and the chest opened without any preoperative preparation of the pleura by a long intercostal incision. A wide exposure facilitates the hilar dissection. Complete hæmostasis in the chest wound was secured before the pleura was opened. In the first case the lobe was freed of adhesions before the hilar dissection was started, but in the other two the bronchus was rapidly found on the back of the hilum and closed with a stout silk ligature. This we believe to be an important point as it eliminates the danger of spill-over of secretion during the manipulation of the lobe to divide adhesions and define the hilum. We do not know whether this early bronchial closure would always be possible and the ligature must not be applied until the bronchus is clearly defined, but in the two cases this presented no difficulty. As already mentioned, preoperative bronchoscopy can provide useful knowledge of the arrangement of the bronchi.

Hilar dissection and bronchial closure.—In each case the interlobar fissure was well defined although slightly adherent and was deepened to the hilum without difficulty. This and the isolation of the hilar structures was done mainly by blunt dissection with small gauze balls although occasionally sharp dissection was used. The main vessels were divided between thread ligatures. Small vessels crossing the depth of the fissure and those supplying the enlarged hilar glands were closed with Cushing's silver clips which have proved very useful and time-saving. It has been our aim to keep the dissection dry and these small vessels cannot be neglected. The bronchus has been closed in each case with a single stout silk ligature, applied early in the second and third. In the first case no further closure was made but in the other two the cut edges beyond the ligature were approximated with fine silk sutures. The cut edges were bleeding and it seemed probable that branches of the bronchial artery had escaped the main ligature. In each case a complete pleural covering of the stump was obtained but in the second case the suture was under tension, partly because of large hilar glands which were not removed.

Closure of chest.—After a test inflation of the upper lobe the chest was closed without drainage. Great care was taken to obtain hæmostasis in the chest and to make a clean section of the bronchus so that drainage could be omitted. The merits of this step cannot be judged on three cases but none developed empyema. Some might attribute this to good fortune, others to the postoperative chemotherapy. The wound was closed in layers with interrupted silk sutures, care being taken to make air-tight closure of the pleura. No catgut was used in any of the operations.

Transfusion.—The operations were performed with little regard for time, and steps were taken to make good fluid loss by setting up an intravenous drip before the start of operation. Blood was available in case of troublesome hæmorrhage, but was not needed, small amounts of saline only being given.

Postoperative care.—The child was placed in an oxygen tent in the Trendelenburg position after operation. The tent was used for a few days and the foot of the cot lowered on the day after operation, after which changes of posture were encouraged. In each case prophylactic sulphapyridine was given for a few days after operation. In the first and third cases the postoperative course gave no anxiety and expansion of the upper lobe was rapid. In the second expansion was delayed and improvement

1. Blades, B. and Kent, E. M. *J. Thorac. Surg.* 1940, **10**, 84.

followed bronchoscopic treatment. Aspirations of the pleura were carried out in each case and in two a small bloody effusion was found.

CASE-RECORDS

CASE 1.—Boy, aged 11. Left lower-lobe bronchiectasis. Fair physique, slightly under size but little evidence of toxæmia.

Operation on Aug. 6, 1940. The child's colour was good and the respiration unembarrassed with paraldehyde narcosis.

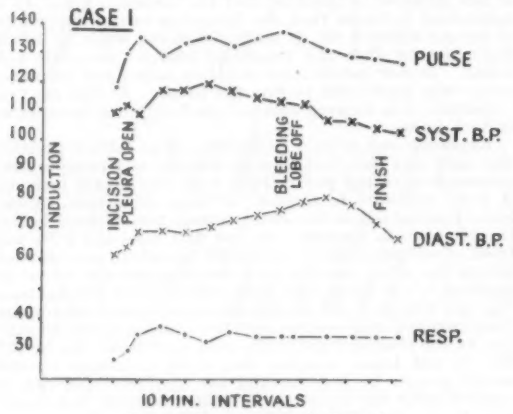


FIG. 1—Operation chart of case 1.

After induction and passage of the endotracheal tube the airway remained clear and the colour good. The chest was opened in the seventh left intercostal space. The lower lobe was partly collapsed and was attached to the chest wall and diaphragm by many adhesions which were lax and long. The adhesions were divided and the lower lobe freed up to the hilum, the interlobar fissure being easily defined in spite of adhesions. The hilum was dissected and its components ligated individually, the larger vessels with thread and the bronchus with a single stout silk ligature, small vessels being closed with silver clips. The ligature slipped off the inferior pulmonary vein but bleeding was easily controlled. Apart from this accident hæmostasis was satisfactory. The pleura was sutured over the stump with fine silk. The pleural cavity was washed out with saline and sucked dry. The first attempt at inflation of the upper lobe failed, but a second attempt after aspiration of muco-pus through the endotracheal tube was successful. The chest was closed in layers without drainage. The operation occupied 115 min., pulse and blood-pressure showing little change (fig. 1). Only a small amount of saline was given intravenously and no blood. Except for the incident mentioned there was no trouble with bronchial secretion and ventilation was satisfactory throughout the operation.

The postoperative course is shown in the chart (fig. 2) and radiogram. The wound healed by first intention. At the time of discharge, 21 days after operation, the chest showed no abnormality except some limitation of movement on the operated side.

CASE 2.—Girl, aged 12. Left lower-lobe bronchiectasis. Poor physique and signs of toxæmia. Right bronchogram

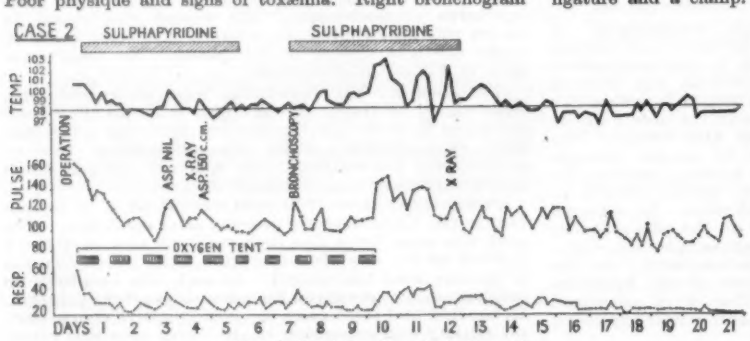


FIG. 4—Postoperative chart of case 2.

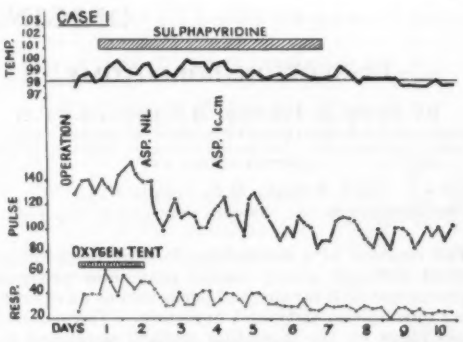


FIG. 2—Postoperative chart of case 1.

showed suspicion of early bronchiectasis in right lower lobe also.

Operation on Aug. 8, 1940. Under paraldehyde narcosis the child's colour was good but respiration was rapid and slightly obstructed. After induction and passage of the endotracheal tube the trachea was cleared of pus and mucus by aspiration, but the respirations were persistently rapid throughout the operation. Aspiration was performed repeatedly until the bronchus was ligatured, after which the airway remained clear. The chest was opened in the seventh left intercostal space. The lower lobe was collapsed and blue, with adhesions to the chest wall and diaphragm. The interlobar fissure was well defined and the hilar glands were much

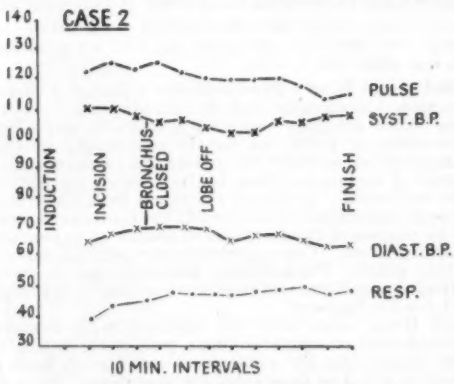
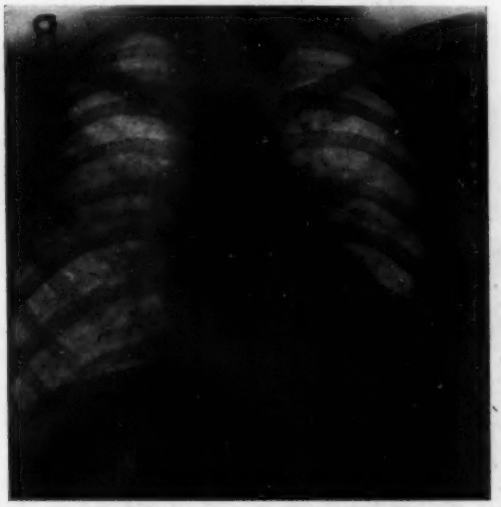


FIG. 3—Operation chart of case 2.

enlarged. The posterior aspect of the hilum was rapidly exposed, and the lower-lobe bronchus defined and closed with a stout silk ligature. The adhesions and broad ligament were divided and the hilar dissection completed, large vessels being ligatured with thread and small ones closed with silver clips. This dissection was made more difficult by many enlarged hilar glands. The bronchus was divided last between the ligature and a clamp. Cut edges of bronchus which were bleeding were coapted with fine silk sutures. The pleura was sutured over the hilum with some difficulty because of the large glands. Attempts to inflate the upper lobe failed in spite of aspiration of secretions. The chest was closed in layers without drainage. A bronchoscope was passed and the upper-lobe bronchus was seen to be bulged inwards from below, but the lower-lobe bronchus was not closed too near the bifurcation. A sucker tube was passed easily into the upper lobe. It was thought that the pleural suture over the hilum had pushed a gland tightly against the upper-lobe bronchus and nothing more was done in the hope that the suture would cut out and release the

POSTOPERATIVE RADIOGRAMS



Case 1 on twelfth day.

Case 3 on fourth day.

tension. The operation lasted 100 min. Saline 150 c.cm. was given intravenously but no blood. Ventilation was satisfactory from the time of bronchial closure. Pulse and blood-pressure varied little (fig. 3). The post-operative course is shown in the chart (fig. 4) and radiograms. Radiography on the fourth day showed no expansion of the upper lobe.

Aug. 15. Bronchoscopy. Pus aspirated from left bronchus. Upper lobe opening still narrowed. Pus aspirated from upper-lobe bronchus and mucosa swabbed with adrenaline. Postural drainage and breathing exercises were resumed to assist re-expansion, which occurred in five days. The wound was superficially infected at posterior end, but healing was complete on discharge 38 days after operation. At that time there was good air entry over left side of chest and no moist sounds on either side.

CASE 3.—Boy, aged 13. Left lower-lobe bronchiectasis. Well-developed boy with little evidence of toxæmia.

Operation on Aug. 22, 1940. The patient's condition and colour were good under paraldehyde narcosis and remained so after passage of the endotracheal tube. As diathermy was used for this operation no ether was given after the induction, the nitrous oxide and oxygen being supplemented by chloroform when necessary. The airway became blocked with secretion just before ligation of the bronchus but was easily cleared by suction through the endotracheal tube. After this the airway remained clear throughout the rest of the operation. The chest was opened in the seventh left intercostal space. The lower lobe was collapsed, blue and nodular, without abnormal adhesions. There were many enlarged hilar glands. The posterior aspect of the hilum was rapidly exposed and the lower lobe bronchus was cleared and closed with a ligature of stout silk. One large vessel was divided during exposure of bronchus. The broad ligament was divided and the hilum was then dissected, large vessels being ligatured with thread and the small ones closed with silver clips. This was a very easy hilar dissection. The bronchus was divided between the ligature and a clamp and the cut edges coapted with fine silk sutures. Pleura was sutured over the stump, good covering being obtained without tension. The upper lobe expanded without difficulty when inflated. The chest was closed in layers without drainage. Operation lasted 95 min., pulse and blood-pressure showing little change (fig. 5). Saline 60 c.cm. was given intravenously and no blood. Except for obstruction just before bronchial ligature ventilation was satisfactory during operation.

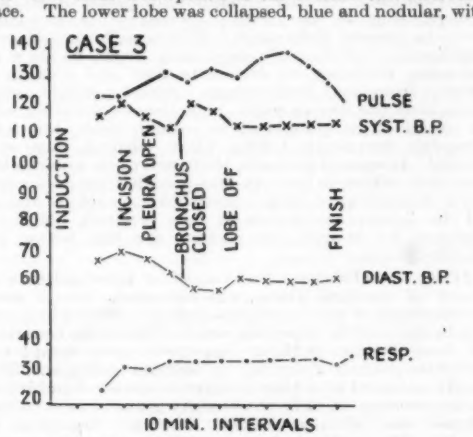


FIG. 5—Operation chart of case 3.

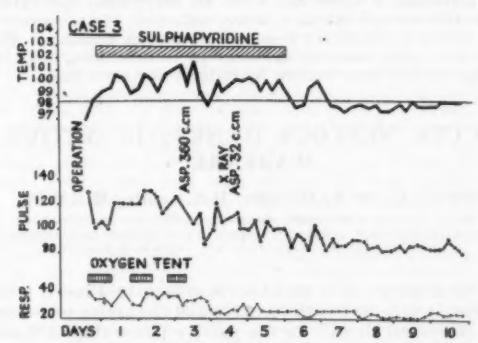


FIG. 6—Postoperative chart of case 3.

The postoperative course is shown in the chart (fig. 6) and radiogram. The wound healed by first intention. At the time of discharge, 14 days after operation, the chest showed slight impairment of percussion note and diminished movement at left base.

COMMENT

Of these three patients, cases 1 and 3 were regarded as good risks, case 2 as a poor one. The operations were all long, on account of the novelty of the procedure and the care given to detail, especially hæmostasis and asepsis. The operation, although not as easy as the tourniquet method, presented no great difficulty and was well tolerated by the patients. The complete removal of the diseased lobe with precise ligature of the hilar

POSTOPERATIVE RADIOGRAMS

Case 2 on fourth day.

Case 2 on thirtieth day.

structures and pleural covering of the stump gives conditions which should be more favourable for healing than those present after the tourniquet operation. We expect to find the operation much more difficult in some cases, for instance, if there has been an empyema, but often after this complication, however adherent the periphery, the hilum is relatively free and its pleura healthy. We believe closure without drainage to be desirable, but the safety of this step cannot be judged on three cases.

SUMMARY

Lobectomy by dissection has been performed successfully in three cases of bronchiectasis.

For bronchial closure a single stout silk ligature was used, the stump being covered with pleura.

The chest was closed without drainage and none of the cases developed empyema or burst bronchus.

In one case there was delayed re-expansion of the upper lobe apparently due to narrowing of its bronchus.

ACUTE NERVOUS ILLNESS IN ACTIVE WARFARE

By W. H. de B. Hubert, B.A. Camb., M.R.C.P.

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The findings at a psychiatric centre in France were strikingly different in the passive and the active phases of the campaign there. In the passive phase they differed very little from those found at any psychiatric outpatient department in peace-time. After the invasion of Holland there was a steadily increasing amount of acute illness, until, by the end of June, admissions consisted almost entirely of conditions directly precipitated by bombing, shelling and the other violent stresses of modern warfare. This paper is confined to the latter group.

MATERIAL

It was found useful to classify cases as follows: (1) those in which anxiety was the prominent symptom; (2) those showing conspicuous hysterical factors; (3) those characterised by stupor; and (4) a mixed group in which acute psychotic illnesses had been suddenly precipitated by factors similar to those operative in the other groups. In all these groups there were conspicuous differences from cases of a comparable kind seen in the more quiescent stage of the war; and these differences were directly related to the acuteness and severity of the precipitating cause. The form of the illness was often much more protean. For example, cases seen almost immediately after onset were commonly semi-stuporose, tremulous, obviously extremely terrified, and unable or unwilling to speak, move or respond in any way to their immediate environment. After some hours or perhaps days had elapsed a definite anxiety state might appear, or alternatively, a classical hysterical illness or other syndrome, but even then the clinical picture would be much more mixed than those ordinarily seen. Description and comment, however, are clarified by discussing these conditions in the groups mentioned above. The groups do not include those cases which were not directly resultant from acute war stress.

(1) *Anxiety states.*—Most of these patients had a short history of previous anxiety symptoms; particularly of occasional anxiety attacks. Often the condition had been coming on over a period of weeks and came to a climax after a more than usually severe bombing, shelling or terrifying ordeal. Nearly all described some sort of collapse, usually characterised by screaming, crying, bolting or other manifestation of uncontrolled emotion. When seen soon after the inception of this acute stage, their condition was one of apparent paralysis by fear corresponding to the semi-stuporose state described above in general behaviour. This usually lasted only some hours. After a few days they began to show an increasing tendency to dissociate fear and attacks of anxiety from real happenings. Attacks would occur throughout the day or night, sometimes coinciding with the sound of an aeroplane, or sudden noise, but with increasing frequency taking place without any such stimuli. It seemed probable that such cases would settle down into subacute anxiety states with a prognosis and course depending on their constitution, previous history and the subsequent treatment they received. Methods employed to modify this course for the better are described later.

(2) *Hysterical states.*—From most of these patients no history of previous illness was obtained, though some were certainly of hysterical personality. More frequently than in the anxiety types the onset of the acute condition had been sudden without any prodromal symptoms. They, too, often described a sudden collapse. This usually occurred at a time of intense stress—bombing or general strafing. Unlike the anxiety group, however, this collapse was often a sudden, dramatic cessation of activity, the patient lying motionless until carried

"unconscious" on a stretcher to the nearest field ambulance. When first seen, a few hours to two days after this, these patients showed an interesting period of transition from a negative semistuporose condition to a typical hysterical picture of one sort or another. The final state reached would presumably be dependent on factors ranging in depth from those that operate in earliest years to those as superficial as the behaviour of the patient in the next bed. Often, from a general lack of all volitional activity, function would return save in one field—speech or vision, for example. In some, two or three symptoms only would be conspicuous, gross tremor being commonly one of them; in others a more complete form of hysteria would appear. The cases with an hysterical amnesia showed an unexpected feature. When first seen, many could furnish a complete history of their ordeal, but when the patient as it were came out into life again the memory became lost, presumably owing to a later-acting protective mechanism. When this amnesia persisted in spite of treatment and recovery in other fields, there was often some good reason in addition to the unpleasantness of the ordeal—a history of an exhibition of cowardice, treachery to a comrade, and like forms of behaviour incompatible with the ordinary psyche of the individual.

(3) *Psychogenic stupor.*—Many of the milder stupors could be described as the first stage of the former two groups; others proved later to be ordinary catatonic stupors, reactive stupors in mental defectives and so on. Nevertheless, there was a sufficient number of cases that could not be included in these categories to make worth while their consideration under a separate heading. Comparable cases are probably extremely rare in civil life and are also usually characterised by having as a precipitating factor some disaster (or event of extreme emotional importance), by a short course and by a good prognosis. The cases seen in France followed stresses similar to those which precipitated illness in groups 1 and 2. When this could be obtained, the previous history appeared uneventful and Army records available indicated that during their period of service they had been satisfactory personalities. They were found on examination to be motionless, mute and insensitive to ordinary environmental stimuli and mild degrees of somatic stimulation, while to severe stimuli they responded but momentarily and to a disproportionally small degree. There was no evidence of organic injury to the C.N.S., or anything to suggest an ordinary concussive or postconcussive state. The more severe cases were incontinent of urine and fæces. The least severe would take portions of food set beside them, without at the time appearing to show any other contact with what was going on around them. There were no features ordinarily characteristic of catatonic stupor, save occasionally the temporary appearance of a mannerism; particularly grimacing. The striking feature of these cases was their rapid recovery from this condition to one of comparative health, without any neurotic or gross psychotic residual symptom. They would become, apparently, perfectly well, except for features not uncommon after a severe psychotic illness, such as pallor, poor appetite and sleep and a mental state difficult to describe, but compounded of timidity and bewilderment.

(4) *Mixed group.*—It was somewhat surprising to find that acute psychotic reaction not uncommonly followed the same sort of traumata as those which were responsible for the psychoneurotic states already described. Patients with, as far as could be discovered, no previous mental illnesses and with satisfactory personalities, under the strain of active warfare broke down into psychotic illnesses, with syndromes of the ordinary kinds. In some of these patients alcohol was a second factor; the importance of the combination of chronic intoxication and severe emotional stress in producing an alcoholic psychosis is, of course, well known. Most of them, however, had no history of alcoholism. The commonest picture was that of an acute paranoid state without auditory hallucinosis. A man, for example, would be in considerable fear, saying that all the patients in the ward were disguised Germans, that his food was poisoned and that he was to be murdered in the night; a man would state that he had suddenly realised in the heat of the battle that the whole war was being fought around him and would produce in confirmatory evidence of this the gestures, chance remarks and attitude of those around him in hospital. In some of these cases acts of violence towards superiors or comrades had been threatened or had actually taken place. Typical catatonic schizophrenic stupors also occurred under these conditions, and there were also examples of acute depressive states, with delusions of unworthiness and depressive persecutory ideas. Although this group was very small in comparison with the others it is interesting from the point of view of the genesis, prognosis and treatment of these states, even when occurring in more ordinary situations.

TREATMENT

In nearly all cases, including even those of psychogenic stupor, the first requirement seemed to be the isolation of the patient from his environment by the use of hypnotic drugs; the more a patient could be removed from any hint of the environmental stresses which had led to his collapse, the quicker did he seem to come out of this first stage of the illness. As a routine, therefore, sedative drugs to produce effects up to full continuous narcosis were used in the great majority of cases. This was carried on, depending on the type of reaction and its severity, from forty-eight hours to three or four days. The necessity for rapid results did not allow a further extension of the period.

As soon as possible psychotherapeutic methods, based primarily on a knowledge of the syndromes involved rather than on investigation of variations in the individual, were carried out, in combination with the strong suggestive influences of a trained staff and the practical atmosphere of a war-time hospital. Thus in anxiety states efforts were made to concentrate the patient's attention on the fact that the illness was directly related to normal fear in a sensitive individual, and to distract his attention from the other aspect of his case—that he had a constitutional or early acquired tendency to anxiety reactions in the absence of adequate precipitating causes. In hysterics, as far as possible, during the period before the illness had become crystallised, and, particularly, before a well-defined amnesia could set in, any immediate conflicts about his behaviour during the time of crisis and his present situation were discussed, while his tendencies towards melodrama and dramatisation of himself were turned as far as possible away from the sphere of illness and back to the situation to which he should return and deal with without further breakdown. In the stupors, on the other hand, it was often found best to allow the patient the benefit of the mechanism which had blotted out for him the period of unendurable strain and its immediate sequel; thus following the generally accepted practice in ordinary psychotic illnesses of refraining from discussing any strongly emotional contributing factor that may be present, either altogether, or at any rate until comparative health has been reached. That this procedure was justified was suggested by the absence in cases thus treated of any hysterical sequelæ.

Various schemes of physical treatment were employed. Some cases, particularly those showing conspicuous changes of affect responded well to treatment based on the probable synergic action of the barbiturates and benzedrine. The two drugs were given alternately for twelve-hour periods in comparatively large doses—for example, up to gr. 15 of barbitone soluble and 20 mg. of benzedrine sulphate in the twelve hours. Group therapy was found useful; different types of patient were put in the same wards and by means of direction, suggestion and interpretation helped to react beneficially on other groups. This was especially successful with patients who had previously been useful members of a community, in this instance the Army. That some patients do very well with this form of treatment was shown by their behaviour in subsequent severe stresses at times in which their reactions could be observed. Throughout, it was considered important to keep in the wards an atmosphere of expectation of quick recovery and return to duty and to segregate at once those cases whose improvement was likely to be delayed or who showed early symptoms of chronicity. It was also found useful to stress as far as possible, in the treatment and management of these patients, their points of likeness to other battle casualties rather than their dissimilarities.

There seemed to be sufficient evidence to conclude that most of them could usefully remain in the Army, some in front-line service, and some temporarily, others permanently, in more sheltered spheres. It must be remembered that bombing alone, which of course may occur anywhere, does not cause the same mental stress as it does when combined with actual proximity to the enemy, and, particularly, with the confusion and bewilderment to which modern mechanised warfare can so easily lead. From this it follows that since extremely severe stress is involved, a group of acute psychoneurotic cases will probably contain a high proportion of men likely to respond at once to treatment conducted on the lines described.

It is not possible to generalise about the treatment of the psychotic group because the conditions included there are so different. In many forms of psychoses treatment consists merely of palliative measures until the patient can receive care in a mental hospital. On the whole, however, most of the psychoses in this series either proved or appeared likely to run a much shorter course with treatment than those occurring under ordinary conditions. For some cases, particularly those showing the milder depressions and short-lived paranoid episodes, return to light duty seemed advisable.

SUMMARY

Cases of acute nervous illness occurring in men exposed to the stress of modern war are divided into those characterised by anxiety, by hysterical symptoms or by stupor, and a mixed group of psychotic illnesses.

Patients likely to recover should be segregated as soon as possible from those likely to become chronic, and the importance of an early return to duty should be emphasised.

Treatment in the early stages was by sedation, later by psychotherapy based on knowledge of the syndromes involved rather than on investigations of individual variations. The trained staff and the atmosphere of a war-time hospital exerted suggestion on the patients, and group therapy depending on the influence of patients on one another was also used.

The evidence suggested that most of these psychoneurotic cases could usefully remain either in the front line or in more sheltered posts in the Army.

I would like to thank Colonel Henry Yellowlees, then consultant to the B.E.F., for his help.

AMMONIUM CHLORIDE AND AMMONIUM CARBONATE IN CHRONIC BRONCHITIS

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IN 1927, Gunn, reviewing the action of expectorants, referred to them as "the one department of therapeutics in which little forward movement has been registered, not only in a decade, but hardly any even in the last half century." Misgeld (1934) rightly rejects experimental methods on animals as unsatisfactory and pleads for the measurement of sputum in man. I have already published an investigation (Alstead 1939) of the value of potassium iodide and ipecacuanha on these lines.

DOSAGE

The object of the clinical research recorded here was to assess the value of ammonium chloride and ammonium carbonate as expectorants. Observations were made on 31 consecutive cases of chronic bronchitis treated in two adjacent wards at Stobhill Hospital during the winter 1939–40. The physical signs in the chest were typical of chronic bronchitis. The clinical material and the method were similar to those used in my previous investigation. On this occasion, however, the output of sputum was recorded in grammes. As a control period, about seven days was allowed to elapse without treatment with drugs. Thereafter, for similar periods, ammonium chloride and ammonium carbonate were administered consecutively. Thus in three consecutive periods of approximately seven days the patient's treatment was: (1) no drugs; (2) ammonium chloride; and (3) ammonium carbonate. Alternatively the following order was observed: (1) no drugs; (2) ammonium carbonate; and (3) ammonium chloride. Substantial doses were employed: gr. 20 of ammonium chloride was given four times daily dissolved in ½ oz. of water; the dose of ammonium carbonate was gr. 10 in ½ oz. of water four times daily. The drugs were given after meals at 10 A.M., 2 P.M., 6 P.M., and 10 P.M. In this method of investigation, which is specially applicable to chronic diseases, each patient acts as his own control.

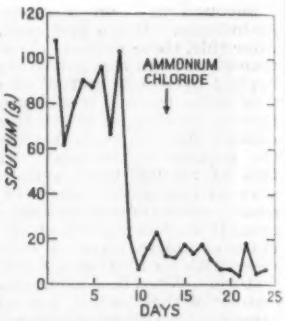

FIG. 1—Output of sputum before and after administration of ammonium chloride, showing considerable fluctuations and therefore need for observation period.

It may be objected that the natural tendency to improvement, accompanied by diminution of expectoration, introduces a factor which interferes with the comparison. This point is discussed below, and suitable precautions have been taken to ensure fair comparison between control and succeeding periods. Although such a tendency is undoubtedly present in most of the patients, it is seen in the control period as well as in periods of treatment. Further, the drugs in question are supposed to increase the expectoration, and if they are able to do this their action should be apparent despite a naturally diminishing output of sputum.

RESULTS

Output of sputum.—Fluctuations in the output of sputum during the control period were often considerable; this has to be borne in mind in trying to determine the significance of similar fluctuations following the administration of the drugs investigated. The need for observation during a control period of adequate duration is illustrated in fig. 1. Fluctuations of smaller amplitude were invariably present when expectoration persisted for a sufficiently long period (fig. 2) and were absent when there was an obvious tendency to spontaneous recovery accompanied by a rapid fall in the output of sputum (fig. 3). The most likely explanation of the variations seen in the cases represented by fig. 2 is that these patients were suffering from minor grades of bronchiectasis, and that the fluctuations in output were due to the alternate filling up and evacuation of the slightly dilated bronchi.

An apparent relationship between the giving of a drug and an increase in the output of sputum is well illustrated in fig. 4. By itself it is certainly impressive, but it must be considered alongside fig. 5, in which the opposite effect is shown. If the orthodox explanations of the pharmacology of nauseating expectorants is correct, it is reasonable to assume that the amount of sputum should increase immediately after administration of the drug, and that the increased output should continue for several days. In the present series, if we accept as clinically significant only those cases in which expectoration increased within twenty-four hours of starting the drug and continued for not less than three days, we find that of 31 patients who received ammonium chloride only 2 responded to the drug; of 15 patients treated with ammonium carbonate an immediate and sustained response took place in 4.

Comparisons were made between the average daily output of secretion in the control period and during treatment. When a patient received both drugs, the average output while under treatment with the first was compared with the average output during the preceding control period. If the expectoration was unaffected while the patient was receiving the first drug, this period of observation was used as the control against the second drug. On the other hand, if the average output increased during the administration of the first drug, the initial control period was used for the second drug also.

It cannot therefore be argued that some of the "failures" with the second drug are due to the effect of a control period which has a high average output produced by using the first drug. When the increase or decrease of expectoration did not exceed 10% of the value obtained in the control period, the result was classified as "unchanged."

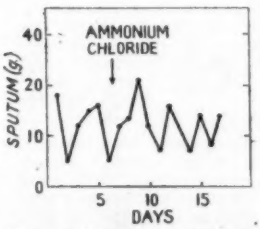

FIG. 2—Output of sputum, showing small fluctuations before and after administration of ammonium chloride.

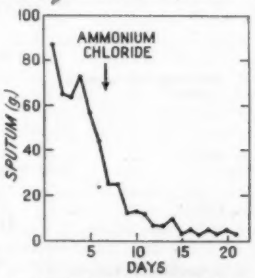

FIG. 3—Output of sputum, showing spontaneous diminution before and after administration of ammonium chloride.

The findings for the series of 31 patients treated with ammonium chloride may be summarised as follows: the average output of sputum increased in 8 patients, decreased in 13, and was unchanged in the remaining 10. After the administration of ammonium carbonate to 15 patients, the average output increased in 5, decreased in 5 and was unchanged in 5.

The findings for the series of cases were also examined statistically. For the 31 patients treated with ammonium chloride it was found that, compared with the control period, there was a fall in the output of sputum, and that the average decrease was 6·7 g. But this difference is not significant; the probability of getting the same value by pure chance is approximately 1 to 4; for significance, the probability of getting this average decrease by chance would have to be 1 in 20 or less. Similarly, for 15 patients treated with ammonium carbonate the average decrease was 0·6 g. compared with the output in the control period, and this decrease is not significant. From the statistical analysis it is clear that there is no occasion to discuss increased output of sputum. The fact that the average decreases are not significant does not support the view, sometimes expressed, that expectorants exert some beneficial action on the bronchial mucosa, thus hastening recovery. As already pointed out, there is a natural tendency in some patients towards a rapid decrease of expectoration, as shown by individual curves (figs. 3 and 5). It might be argued that the effect of the drug was to retard this natural decrease, and that the average output under the influence of the drug would be higher than if no drug had been given. However, some of the patients whose graphs of expectoration showed no fluctuation during the control period show the same exponential curve persisting during the time that the drug was being given. This indicates that the drug did not retard the rate of diminution of output of sputum.

Value as emetics.—Although the patients invariably remarked that the solutions of ammonium chloride and ammonium carbonate were unpleasant to take, only 1 patient vomited, and none of the others complained of nausea. In view of these findings it was thought worth while to determine the value of ammonium carbonate as an emetic or nauseating substance. Accordingly a dose of ammonium carbonate gr. 30 dissolved in 2 oz. of water was given to 20 patients about an hour after food: 18 were unaffected (no nausea and no vomiting); 1 patient suffering from chronic cholecystitis vomited within a few minutes of receiving the drug, but he also vomited any other drug that was given, including liquid paraffin; the other patient, suffering from an anxiety neurosis with gastric symptoms, said that half an hour after taking the drug he experienced nausea for about ten minutes but did not vomit; 12 of the patients were known to have normal gastric juice or hyperchlorhydria; the remaining 8 were chosen for the test because they had no free hydrochloric acid as shown by fractional test-meal. It is clear, therefore, that the failure of the drug to act as a nauseating agent is not explained by the presence or absence of gastric hydrochloric acid. Finally, 3 patients (1 with hyperchlorhydria and the others with achlorhydria) were each given ammonium carbonate gr. 60; none of them suffered from nausea.

Fate of the carbonate.—The fate of ammonium carbonate and ammonium chloride in the stomach is of interest in connexion with their supposed expectorant action. When there is free hydrochloric acid in the gastric juice, the carbonate is converted to the chloride within half a minute. Owing to the presence of buffering substances, including large quantities of mucus, neutralisation is not instantaneous, but it is certainly rapid. This has been confirmed in the course of this investigation by tests on the gastric juice in vitro and in vivo (fig. 6). It is therefore reasonable to conclude that any sustained action exerted by ammonium carbonate as a reflex expectorant must take place despite its rapid conversion to ammonium chloride. This being so, the series of cases was reviewed to ascertain whether the patients who had shown an apparent increase in the output of sputum on one ammonium salt responded in the same way when the other was administered. It was found that of the 5 patients who had shown increased expectoration on ammonium carbonate 3 did not respond in the same way when treated with ammonium chloride.

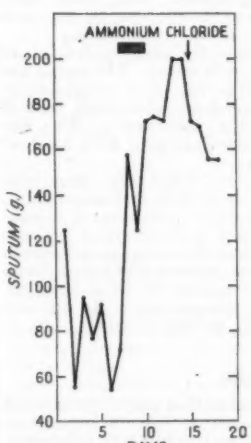

FIG. 4—Output of sputum, showing apparent relationship between increase of sputum and administration of ammonium chloride. Compare opposite effect in fig. 5.

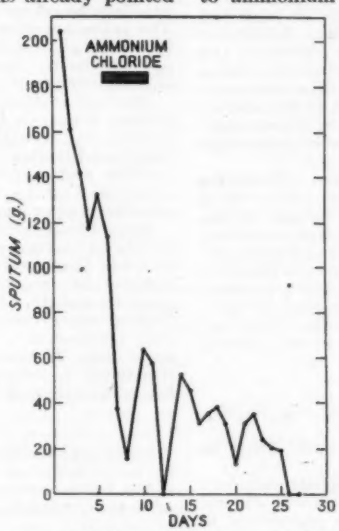

FIG. 5—Output of sputum, showing apparent relationship between decrease of sputum and administration of ammonium chloride. Compare opposite effect in fig. 4.

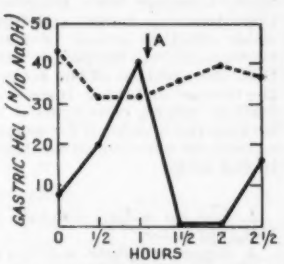

FIG. 6—Results of fractional test-meals from the same patient, showing immediate conversion of ammonium carbonate into ammonium chloride.
Dotted line, routine fractional test-meal.
Continuous line, fractional test-meal later (ammonium carbonate gr. 30 given at A).

Alteration of sputum.—Changes in the naked-eye appearance of the sputum were uncommon. In 3 cases the sputum, which was mucopurulent at the beginning, became more mucoid, but these alterations did not coincide with changes in drug treatment. In the patient whose graph is shown in fig. 4 the pronounced increase in expectoration was not accompanied by any qualitative change in sputum, which remained thick and purulent throughout the period of observation.

CONCLUSION

Doses of ammonium carbonate six times greater than the maximal official dose rarely cause nausea. There is no evidence that either ammonium carbonate or ammonium chloride has any effect on expectoration in bronchitis. In chronic bronchitis and bronchiectasis with profuse secretion of sputum ammonium carbonate and ammonium chloride are not contra-indicated as is usually supposed; but, on the other hand, the results of this investigation do not justify the view that they are of any value in these diseases.

I am indebted to Prof. Noah Morris for his interest in this work and to Sister J. E. Rennie and Sister F. Robbie for their coöperation. Dr. Richard A. Robb of the mathematics department in the University of Glasgow kindly undertook a statistical examination of the results.

REFERENCES

Alstead, S. (1939) *Lancet*, **2**, 932.
Gunn, J. A. (1927) *Brit. med. J.* **2**, 972.
Misgeld, J. F. (1934) *Med. Welt*, **8**, 263.

PRESERVATION OF BLOOD FOR SUGAR ANALYSIS

BY

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SUGAR disappears slowly from shed blood, and sugar analyses must therefore be made promptly after taking the blood samples, especially during the summer when higher room temperatures are encountered. Destruction is brought about by the glucolytic enzymes of the blood or by bacterial action. This destruction may be inhibited by the addition of oxalate, fluoride, formaldehyde or thymol. These substances vary in their efficiency, the most effective agent being a mixture of 10 parts sodium fluoride with 1 part of thymol. A serious objection to the use of this mixture is that inferior grades of thymol, or solutions of thymol which have stood for a long time, may reduce the sugar reagent, thus giving erroneously high sugar values.

Copper is an efficient anti-glucolytic agent. It is also used, together with tungstate (Somogyi 1931), as a deproteinising agent, and has proved to be one of the most effective means of removing non-sugar-reducing substances from the blood. It therefore seemed probable that the addition of the copper sulphate to the blood at the time of its taking, instead of at the time of deproteinisation, might constitute a convenient means of preserving the specimen for sugar analysis. That it proved extremely effective in so doing is shown by the results in the table.

REAGENTS

1. Isotonic sodium sulphate solution; 3% w/v $Na_2SO_4.10H_2O$ in water.

2. Copper sulphate solution; 7% w/v $CuSO_4.5H_2O$ in water.

3. Copper sulphate in isotonic sodium sulphate solution; 30 ml. of the copper sulphate solution are mixed with 320 ml. of isotonic sodium sulphate. These are the proportions in which isotonic sodium sulphate and copper sulphate were used in our previously described method of blood-sugar analysis (King et al. 1937).

4. Sodium tungstate; 10% w/v in water.

PRESERVATION OF BLOOD-SUGAR BY COPPER SULPHATE

Specimen	Time of incubation (hr.)	Temperature	Blood-sugar (mg. per 100 ml.) using as diluting fluid: $CuSO_4 + Na_2SO_4$	Na_2SO_4
1. Heparinised venous blood	0	R.T.	55	52
	1	37° C.	53	41
	2	,,	53	27
	3	,,	53	..
	25	R.T.	58	13
2. Ditto	0	37° C.	65	..
	72	,,	67	..
	145	,,	68	..
3. Ditto	0	R.T.	65	..
	72	,,	67	..
	145	,,	68	..
4. Heparinised venous blood + glucose	0	,,	284	281
	2	,,	283	267
	4	,,	285	253
	22	,,	281	205
	48	,,	285	142
5. Capillary blood	0	,,	104	..
	21	,,	103	..
	47	,,	104	..
	70	,,	108	..
	93	,,	113	..
	116	,,	115	..
6. Ditto	0	37° C.	70	..
	72	,,	97	..
7. Capillary blood + glucose	0	R.T.	320	320
	2	,,	320	310
	4	,,	321	292
	22	,,	324	233
8. Heparinised diabetic blood (controlled by insulin)	0	,,	53	52
	2	,,	52	34
	20	,,	54	13
	26	,,	52	3·5

R.T. = room temperature.

METHOD

Previous procedure.—0·2 ml. of blood was collected in 3·2 ml. of isotonic sodium sulphate. This was deproteinised with 0·3 ml. of sodium tungstate solution and 0·3 ml. of copper sulphate solutions. The mixture was shaken, and filtered or centrifuged.

Present procedure.—Centrifuge tubes, or, more conveniently, screw-capped sample tubes ($\frac{3}{4} \times 4$ in.) are charged with 3·5 ml. of copper sulphate in isotonic sodium sulphate solution, and 0·2 ml. specimens of capillary blood are rinsed into the contents of these tubes. The tubes are closed and left at room temperature until it is desired to complete the analysis. The blood-sugar appears to be stable for many hours and to increase slightly (rather than decrease) after several days.

When it is desired to complete the analysis 0·3 ml. of sodium tungstate is added to each tube. The tubes are shaken and centrifuged or filtered. The supernatant fluids or filtrates obtained are quite clear and free of protein and non-sugar-reducing substances. For the analysis, 2 ml. (= 0·1 ml. of blood) is used with 2 ml. of alkaline copper sugar reagent.

Some blood specimens—e.g., no. 6 in table—preserved in this way for more than three days at room temperature, or more than twelve hours at 37° C., elaborated a non-fermentable reducing substance not removed by the copper tunstate. Such specimens therefore gave a raised "blood-sugar" value. This phenomenon was encountered only occasionally, and only if specimens were kept for more than 72 hours at room temperature. It did not constitute a serious objection to the method, but is being investigated further.

SUMMARY

Specimens for blood-sugar estimation may be preserved up to 72 hours at room temperature without alteration in the sugar content by collecting the blood in a mixture of sodium sulphate and copper sulphate solutions.

REFERENCES

King, E. J., Haslewood, G. A. D. and Delory, G. E. (1937) *Lancet*, **1**, 886; **2**, 346.
Somogyi, M. (1931) *J. Biol. Chem.* **90**, 725.

STAPHYLOCOCCAL SEPTICÆMIA TREATED WITH SULPHATHIAZOLE

By Jack Heselson, M.B. Cape Town, F.R.C.S.
SURGEON, E.M.S.

Sulphathiazole appears to be the most efficient of the drugs of the sulphanilamide group against the staphylococcus; but in view of the relatively few reported recoveries from staphylococcal septicæmia treated with these drugs I thought it worth while to report a successful case.

CASE-HISTORY

A girl aged 8 was admitted to the Western Hospital as a case of meningitis on Nov. 18, 1940. The illness had begun four days previously when the child complained of pain and tenderness in the right heel and would not walk. During the next few days she became obviously more ill with feverishness, loss of appetite and repeated shivering bouts. On the morning of admission she appeared drowsy, and swelling of the right index finger was noticed. That night she was much worse with increased drowsiness and irritability, difficulty in swallowing with regurgitation of fluids through the nose and aphasia. Lumbar puncture shortly after admission revealed clear fluid, apparently under pressure, on which the pathological report was: protein 25 mg. per 100 ml.; globulin no increase; chlorides, reckoned as sodium chloride, 710 mg. per 100 ml.; cells 1 per c.cm. Sulphapyridine, 1 g., was given intramuscularly and 0·75 g. four hourly by mouth, for four doses, most of which was regurgitated or vomited.

The child was referred to me on the evening of the 19th, when she was extremely ill, temperature 103° F., drowsy and apparently aphasic. There was slight neck stiffness but no definite Kernig's sign, bilateral facial and palatal palsies. The right heel was red, tender and slightly swollen, and there was a spindle-shaped fluctuant swelling of the proximal phalanx of the right index finger. Osteomyelitis of the calcaneus with septicæmia and pyæmic involvement of the finger was diagnosed. At operation pus was found beneath the periosteum of the os calcis, which was guttered, and of the phalanx. Blood was taken for culture prior to operation and an intravenous drip containing 15 g. of sulphathiazole (M. & B. 760) in a pint of saline was begun. This was given over a period of 24 hours, and subsequently the child was placed on sulphathiazole by mouth and given the very large amount of 64 g. during the next nine days, in diminishing doses. On the day after operation the patient was seen by Dr. J. St.C. Elkington who thought the nervous symptoms due to meningismus or possible early basal meningitis. Her general condition though still poor was much improved; her speech which had returned to some extent, and speech difficulty was now considered to be a severe dysarthria due to a combination of dyspnœa, dry mouth, palatal and facial weakness. A second lumbar puncture performed this day yielded a clear fluid still under pressure (200 mm. of water) with protein 25 mg. per 100 ml.; globulin not increased; chlorides 710 mg. per 100 ml.; cells 38 per c.cm.: a few lymphocytes mostly polymorphs. *Staphylococcus aureus* was grown from the pus of the heel and the finger; and reports on blood-cultures were as follows: Nov. 19, *Staph. aureus*, coagulase test positive: Nov. 21 (two days after operation and beginning of intensive sulphathiazole therapy) cultures sterile; Nov. 28, cultures sterile.

The nervous phenomena cleared up along with the general condition in the next few days. On the 20th the child complained of pain at the lower end of the left femur, and the next day aspiration of an obvious subperiosteal abscess here yielded pus from which coagulase-positive *Staph. aureus* was grown. This aspiration was repeated two days later and after that the lesion completely subsided. On the 30th a generalised erythematous maculo-papular rash was noted, and a few days later blood, a fair number of leucocytes, epithelial cells and albumin appeared in the urine. Urinary cultures yielded one colony of *Bacillus coli*, and the blood-urea was raised to 63 mg. per 100 ml. These were regarded as being probably toxic manifestations of the drug, but the hæmaturia may in fact have denoted a nephritis. Blood-counts were done frequently without any evidence of a leucopenia. When last seen the hæmaturia and albuminuria, as well as the infection in the left femur and finger, had completely cleared up, and the child's general condition was excellent; but there was a discharge from the back of the left heel and radiography revealed a few flake sequestra and a small localised area of low-grade osteomyelitis at the lower end of the left tibia.

I wish to thank Dr. H. Kelleher, medical superintendent of the Western Hospital, and Dr. Allen Daley, chief medical officer to the L.C.C., for permission to publish this case.

VITAMINS A AND D IN DRIPPING

BY

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Information on the amount of vitamin A and especially of vitamin D in animal fats other than butter is very scanty. The Ministry of Food was particularly desirous of finding out what are the likely vitamin contents of drippings sold in the poorer parts of the large towns. Tests were therefore carried out at the suggestion of Prof. J. C. Drummond, scientific adviser to the ministry, on several samples of beef dripping bought at small shops in different localities during July, 1940.

VITAMIN-A TESTS

BY T. W. GOODWIN AND R. A. MORTON

Vitamin A was determined spectroscopically using the 617 mμ absorption maximum in the blue solution obtained with $SbCl_3$ in chloroform. Since the concentration of vitamin A in dripping is low it is necessary to carry out the colour test on the non-saponifiable fraction (cf. Morton 1936, Edisbury 1940). Nine samples in all were received. Four of them were the remainder of specimens used for the estimation of vitamin D. The five others had been purchased in Newcastle-on-Tyne, Leeds, Portsmouth, Nottingham and Kingston-on-Thames.

From the Nottingham sample 50 g. was saponified and the non-saponifiable residue dissolved in 1 ml. of chloroform. No absorption bands were seen when this was treated with the $SbCl_3$ reagent and it was certain that the amounts of vitamin A and carotene were exceedingly small. After this several drippings were bulked and 200 g. of mixed material saponified. The non-saponifiable matter (yield 0·12%) contained a fair proportion of cholesterol. Most of it was eliminated by freezing a methyl-alcohol solution. The soluble part was taken to dryness in a stream of nitrogen and the residue dissolved in 2 ml. $CHCl_3$. Vitamin A was definitely detected by the 617 mμ maximum obtained with the $SbCl_3$ reagent but the potency of the dripping could not have been much greater than 0·2 i.u. per gramme.

A pooled sample weighing 133 g. of the other four drippings yielded 0·14% of non-saponifiable matter. Tested with the $SbCl_3$ reagent it yielded two bands with λλ max. 617 mμ and 580 mμ. In this case the potency came out as < 0·2 > 0·5 i.u./g.

Even allowing for manipulative difficulties at these very low levels the vitamin-A potency of the drippings examined is certainly less than 1 i.u./g. Carotene was not observed although looked for. In biological tests on English drippings, Coward (private communication) found only negligible quantities of vitamin A.

VITAMIN-D TESTS

BY K. M. HENRY AND S. K. KON

Biological assays were carried out on four samples of dripping: (1) a half-and-half mixture of samples bought in Durham and Whitehaven; (2) a half-and-half mixture

of samples bought in two different neighbourhoods in Worcester; (3) wrapped dripping bought in Reading; and (4) dripping from a pan bought in a different shop in Reading.

It was anticipated that the vitamin-D content of the drippings would be low. To facilitate feeding and to avoid the antirachitic effect of fat (Henry and Kon 1940) the drippings were saponified and the non-saponifiable residue was fed dissolved in olive oil, as described for butter by Kon and Booth (1933). Prophylactic tests (Kon and Henry 1935) on litter-mate rats were carried out, groups of 12 being used. All drippings were given at the rate of the equivalent of 1 gramme daily six times a week. The international standard for vitamin D (V.D.20) was given at levels of 0·025 and 0·05 i.u. daily except Sundays.

Table I, in which the mean ash content of the rat bones is given, shows that the drippings contained more vitamin D than was expected and that a calculation of their potency based on the levels of standard fed would involve unjustified extrapolation. Two higher levels of standard, 0·1 and 0·2 i.u. daily, were fed simultaneously to another group of rats. The bones of the negative control animals belonging to that group had almost the same mean ash content as those of the negative controls in the present experiment (32·2% as against 32·3%). The two groups of rats were from the same stock but not litter-mates. An analysis of variance done by Dr. K. H. Coward showed, however, that in this instance the variance due to differences between litters in each group was not significantly different from the variance due to randomisation. We thought it therefore permissible to calculate results of the tests on drippings using the response to the higher standard levels obtained in the other tests. A logarithmic relation between effect and dose was assumed. The results are given in table II. They show, with the reservation just mentioned, that

TABLE I—MEAN ASH CONTENT (%) OF THE DRIED DE-FATTED FEMORA AND HUMERI IN GROUPS OF 6 MALE AND 6 FEMALE RATS

Dr. 1	Dr. 2	Dr. 3	Dr. 4	Standard		Negative control	Standard		Negative control
				0·025 i.u.	0·05 i.u.		0·1 i.u.	0·2 i.u.	
47·8	46·9	50·1	50·4	35·2	37·8	32·2	42·0	46·0	32·3

Dr. = dripping.

drippings contain an appreciable quantity of vitamin D. As values obtained on the non-saponifiable residue are minimal and not complicated by the fat effect we may take it that drippings purchased in this country in summer are about equal in antirachitic value to summer butter. (Values for English and Scottish summer butter measured on the fat are given by Campion and others 1937 and by Wilkinson 1939.) It is of interest that the

TABLE II—VITAMIN-D CONTENT OF THE DRIPPINGS

Dripping no... ..	1	2	3	4
Vitamin-D content (per g.) .. .. i.u. ..	0·28	0·23	0·40	0·44

vitamin-A content of these drippings was only a small fraction of that of butter.

SUMMARY

The vitamin-A content of dripping purchased in July, 1940, in different parts of the country was negligible, not more than 1 i.u./g.

The vitamin-D content of four samples, measured on the non-saponifiable residue, was appreciable for this class of food, from 0·23–0·44 i.u./g., and of the same order as that of summer butter.

REFERENCES

Campion, J. E., Henry, K. M., Kon, S. K. and Mackintosh, J. (1937) *Biochem. J.* **31**, 81.
Edisbury, J. R. (1940) *Analyst*, **65**, 484.
Henry, K. M. and Kon, S. K. (1940) *Chem. and Ind.* **59**, 184.
Kon, S. K. and Booth, R. G. (1933) *Biochem. J.* **27**, 1302.
— and Henry, K. M. (1935) *Ibid*, **29**, 2051.
Morton, R. A. (1935) Absorption Spectra of Vitamins and Hormones, London.
Wilkinson, H. (1939) *Analyst*, **64**, 17.

Medical Societies

ROYAL SOCIETY OF MEDICINE

AT a meeting of the Section of Orthopædics held on Feb. 22, with Mr. S. L. HIGGS, the president, in the chair, Mr. W. ROWLEY BRISTOW opened a discussion on the treatment of

Injuries to Peripheral Nerves

He said that patients with peripheral nerve injuries are now segregated, so that they can be worked on by a team and the results collected. It is impossible to keep the patients in hospital for the long period required for their complete cure; they must be discharged and attend at suitable centres, but arrangements have been made to bring them back for re-examination by the surgeons and physicians who treated them. In the last war the effort made to ascertain results was feeble, and statistically true end-results were few; follow-up arrangements would, Mr. Bristow hoped, be better this time. He reviewed the treatment of 145 patients. Ulnar nerve injuries predominated, with musculospiral and median nerve injuries running them close. He has only seen 1 case of causalgia and 2 simple lesions of the musculocutaneous nerve. Only 23 of these patients were treated by operation. As in the treatment of infantile paralysis, therapy is directed towards the recovery of posture and the assistance of nutrition. The paralysed muscle is relaxed, but the orthopædist cannot afford to keep the hand stiff in musculospiral or posterior interosseous palsy. The splint now used in preference to the long cock-up is a light trough of aluminium with a piece for the palm to hold the wrist in slight dorsiflexion; this piece is short enough not to impinge on the hand distal to the proximal crease of the palm. The back piece works over sausage-shaped rolls. Two straps can be applied round the tip of the elbow to prevent the splint from impinging downwards and causing swelling of the hand. For lesions of the median nerve a small piece of adhesive is sometimes applied to hold the hand in the best position at night; for lesions of the ulnar a garter is applied to keep the three fingers together, while the hand is being used in the day-time. Lesions of the sciatic nerve produce two definite disabilities—the fixed flexion deformity of the interphalangeal joint of the great toe, and ordinary foot-drop. The first lesion is sometimes overlooked, and the patient has to return to hospital for treatment of the resulting deformity. Heat, massage, electrical stimulation, re-education and exercises all form part of the treatment. Mr. Bristow asked how far electrical stimulation of muscle after complete nerve division with Wallerian degeneration below is of real value. Physically, no treatment has any effect on the time or quality of regeneration of the nerve, but psychologically it may make a considerable difference to a patient with a paralysed limb to see his own muscles contracting and relaxing, and moving a joint which he believed dead. The Medical Research Council laid down after the last war that nerve can regenerate after any length of time. J. S. B. Stopford, however, showed in his study of the results of re-suture after failure of primary suture that if more than three years had elapsed after the injury suture is useless. It may, however, be performed at any time up to two years. Harold Stiles, on the other hand, advocated early operation. Apparently, therefore, operation should be undertaken as early as possible.

Mr. Bristow reminded junior surgeons not to make the elementary mistake of cutting through the scar when they explored for a nerve. The incision should be above and below, and the nerve should be traced back to the injury, otherwise much damage can be done to nerves which are in continuity. The aim is not primarily to stretch but to mobilise the nerve, and it is possible with impunity to expose the ulnar from the wrist to the axilla: its freeing has never resulted in ischæmia. Apparently the blood-supply to nerves is not affected by wide exposure and mobilisation, which is by far the most valuable single factor in obtaining end-to-end union where a wide gap exists. Before the surgeon operates he should know a good deal about the patient. First, he must know the syndrome and how far he is prepared to

go: whether to make a complete section and do an end-to-end suture, or whether the fibres which are still present must be safeguarded at all costs. He requires an appreciation of true end-results, to tell him what he may expect from clean suture. He must be prepared to examine the nerve with the faradic battery or a condenser-discharge apparatus at the time of operation to ascertain its conductivity; and to distinguish one nerve from another in a mass of scar-tissue. The two ends of the nerve can be approximated to a surprising extent by correct posture of the limbs. By stripping the branches of the ulnar, 6–7 in. can be gained. The surgeon will sacrifice branches where necessary to approximate the ends of a nerve like the median. Transposition of the ulnar to the front of the elbow and of the musculospiral to the front of the humerus may give another inch, and bone may be shortened to approximate nerve ends. Extraneous wrappings have been found to cause much scar-tissue. The material for suture is important. Catgut has been proved harmful, and in Edinburgh the surgeons have used No. 160 Stiles's linen thread. Neurolysis is merely a question of freeing the nerve so that it is not pulled on by the scar-tissue. No good result has ever been recorded from bridging operations, neuroplasty, turning down flaps or tubulisation. In the last war, nerve-grafts almost all failed, but later work has been done on the facial nerve in the canal, in which the value of the graft has been proved. The autogenous graft performed by the cable method is likely to be most used in this war. The new method of suture by fibrinogen in plasma may make a difference. Operation may be undertaken to improve function if the nerve fails to recover. When the patient after a sciatic injury has a thin, useless foot, when the internal popliteal element is no longer acting, and trophic or pressure ulcers have formed on the sole, amputation is called for—far more often than it was performed during the last war, and without the delay which was then usual. Mr. Bristow said he would prefer a below-knee operation to a rigid attenuated foot with its other disabilities. For lesions of the external popliteal nerve the elevating spring works perfectly. If the median and ulnar nerves are permanently damaged nothing will help much, but the loss of the ulnar nerve is not of first importance. The loss of sensation and of the intrinsic muscles do not matter for coarse movement. The failure of sensation in the index finger and thumb associated with median nerve loss render the hand of little value. Tendon transplantation has given good results after musculospiral injury. Recovery of function and sensation is nearly always imperfect, even in the most favourable circumstances, after secondary suture or re-suture. It is nearly always perfect after musculospiral suture except that the patient loses the synergic action of the wrist. Recovery of the ulnar is neurologically poor but economically good. If sensation to pinprick is restored, the hand is protected from injury, and the finer forms of sensation and movement are only necessary for delicate work. Recovery of the anterior tibial and sciatic nerves is poor, but the toe-lifting spring helps. Recovery depends on restoration of sensation and enough use of the small intrinsic muscles to protect the foot. The posterior interosseous nerve nearly always fails to unite, and transplantation is required.

Dr. J. St. C. Elkington said that the problem has been in cold storage for 20 years. The great majority of peripheral nerves contain fibres of three kinds: somatic efferent, autonomic efferent, and afferent. Consequently, disturbances of motor, autonomic and sensory function are likely to be found. A group of muscles usually shows complete loss of motor function, but many of the larger muscles obtain their innervation from more than one group of nerves, and so the lesion may be partial. The changes found in muscle are the same however extensive the lesion; they are the classical findings of changes in the lower motor neurone. It is often necessary to differentiate between cases in which the nerve is anatomically severed and those in which the fibres are temporarily out of action without division. When the nerve is not divided the tone of the muscles often does not disappear completely and the degree of wasting is much less. Sometimes, however, clinical distinction is impossible and electrical examination is therefore important. The different types of fibres in a mixed nerve are vulnerable in different degrees. The motor fibres tend to succumb more rapidly than the sensory. This often wrongly suggests a functional or hysterical case rather than an organic one. Most patients develop trick movements of some kind to lessen the effects of their injury, and these are apt to mask the disability and suggest that recovery is taking place when it was not. Disturbances of autonomic function are particularly to be seen in the skin, and also in the subcutaneous tissues and bone. The most important is loss of sweating—a valuable aid to distinction between organic and functional sensory loss. The area usually corresponds closely to that of sensory distribution. The skin becomes thin with a peculiar shiny or glossy quality and cyanosis. The pulp of the nails shrinks and they become ridged and brittle and grow more rapidly on the damaged than on the normal side. The amount of hair on the part increases. Osteoporosis may be advanced in the affected limb. Observation of a few cases seems to show that autonomic precedes sensory recovery. Dr. Elkington doubts whether the phrase "trophic disturbances" has any precise meaning, and he asked how far trophic changes in the limb are responsible for spontaneous discomfort and pain. The estimation of sensory loss is necessary but difficult. Sensation may be divided into superficial and deep, and these aspects must be examined separately. A pin, a wisp of cotton-wool, and hot and cold test-tubes will test sensitivity to pain, touch and temperature simply; the use of precision instruments does not guarantee accurate results. The patient must be warm, comfortable and free from noise; he should feel confidence in the examiner and understand what he is doing. Neither he nor the examiner should be fatigued; half an hour is long enough for any test of the kind.

Dr. Greenfield dealt with the pathology of nerve lesions. He showed by slides how the connective tissue proliferates and the myelination of the fibres decreases. Even under ideal conditions it is impossible to expect the nerve-fibres growing from one cut end to rejoin their fellows at the other. The division contains a very intricate neuroma with numerous axons, and the old nerve channels branch from both ends. Bridging occupies a considerable time; in rabbits it takes about a month.

Mr. R. H. Jocelyn Swan said that a nerve which shows no change in voluntary response may show a change in its condenser-discharge reactions. In the last war many operations were delayed on this evidence, and in some a return of function was observed without operation. He never operates until 5 or 6 months after the injury, and 2½–3 months after healing of the wound. The nerve must be explored widely, particularly above and below the injury. He condemned suture through the nerve, and stated that all sutures must be peridural. The finest thread should be used. On the inferior follow-up data of the last war, treatment of musculospiral lesions seemed to give much the best results. A patient with a median nerve injury probably never regains complete sensibility in his fingers.

Dr. George Riddoch also complained of the tragic gap in the follow-up of patients after the last war. The Medical Research Council is now planning a follow-up of at least 1000 patients over a period of five years. Adequate occupational therapy will be introduced at the orthopædic centres, and discharged patients will be able to return for physiotherapy when it is required.

ROYAL ACADEMY OF MEDICINE IN IRELAND

At a meeting of the section of medicine of this academy on Jan. 17, with Dr. R. H. Micks, president, in the chair, Dr. Kevin Malley and Dr. T. Bradshaw reported on a case of *adreno-cortical syndrome* in a girl of 14. There is a family history on the maternal side of virilism, and a younger sister, aged 11, is believed to be suffering from a similar complaint. The first abnormality was noted at the age of 9, when growth of hair appeared in the pubic region and both axillæ, associated with rapid growth and excessive muscular development; 3 years later a "growth" appeared in the vagina. At the age of 13 soft downy hair appeared on the beard region and

upper lip. Menstruation has not begun. Now the patient is 5½ in. under the normal height and 5 lb. under weight for her age and sex. She has a masculine configuration and voice, and pronounced evidence of acne vulgaris with growth of hair on the beard and lip region. Her muscles are much overdeveloped, her pubic hair extends from the vagina to the umbilicus and there is a dense growth of hair on both legs. Gynæcological examination by Dr. A. W. Spain showed enlargement of the clitoris resembling a male penis; the labia majora are well developed, while the labia minora are poorly formed. There is a definite vagina with a small uterus. The chest, mediastinum and sella turcica are radiographically normal, and the fundi and B.M.R. are normal. There is slight polycythæmia; diminished sugar tolerance; normal calcium, phosphorus and cholesterol; and the renal function, and gastric and fæcal analysis are normal. There is a slight reduction of serum sodium and increase of potassium (Dr. W. J. E. Jessop). A laparotomy (Mr. P. J. Smyth) showed enlargement of both adrenal glands.

Dr. Bradshaw said he had investigated Dr. Malley's case for 17-ketosteroid and sodium pregnandiol glycuronidate excretion in the urine. Investigations were carried out on 24-hour specimens over a period of a month, and excretion of 17-ketosteroids varied from 50 to 106 mg. per 24 hours, the average being 68 mg.; while the sodium pregnandiol glycuronidate output varied from 80 to 297 mg. per 24 hours, the average being 142 mg. He pointed out that these figures are definitely abnormal; the mean figure for the excretion of 17-ketosteroids in normal women is 6·75 mg. per 24 hours, and the output of sodium pregnandiol glycuronidate in the second half of the menstrual cycle normally varies from 0 to about 10 mg. per 24 hours. The excretion of 17-ketosteroids in this patient was, he said, consistent with that found in cases of adrenal tumour.—Dr. D. K. O'Donovan said that the girl presented the clinical picture of Addison's disease and if she was operated on she was likely to go into an acute Addisonian crisis.—Dr. W. R. F. Collis agreed that an operation in this case would be very dangerous, but from the patient's point of view it would be worth while to take a pretty big risk. He suggested the possibility of applying deep X-ray treatment to the left suprarenal. The sodium and potassium content should be watched carefully as this might give a lead in the right direction. It might happen that the deep X rays would hit the cells which were producing the hormone in question.—Dr. O'Conor Donelan said it was rare to find a girl so young with a skin similar to what is found in the type of severe acne occurring in adolescents. Acne usually does not begin until about 6 months before menstruation. In the present case it must have started a long time ago. In some of these acne cases large doses of folliculin give good results, and it might have a good effect here.

In his reply Dr. Malley said he would put the patient on a test diet deficient in sodium. Unfortunately the present type of case was the least suitable of the three types of the adreno-cortical syndrome for operation. The ultimate result of operation would only be to prevent a progression of the syndrome. The girl's parents were willing to have the operation performed although they were fully cognisant of the danger of it. The fact that both glands were enlarged was rather satisfactory, because usually an adenoma was found in one gland only.

Reviews of Books

The Chinese Way in Medicine

By EDWARD H. HUME, M.D. London: Humphrey Milford, Oxford University Press. Pp. 189. 14*s*.

THIS attractive little book consists of three lectures delivered before the Institute of the History of Medicine at Johns Hopkins University by Dr. Edward Hume, an erudite scholar of Chinese and formerly principal of the Hunan-Yale school of medicine, Changsha. Without attempting to do more than touch the fringe of Chinese medical history, the lectures, based as they are on folk-lore and tradition, throw an interesting light on the metaphysical conceptions underlying the Chinese approach to health and disease. The interplay of cosmic forces represented by the opposed Yang and Yin principles, the effect of external environment, both on physical health and on the conditions under which the treatment of illness should rightly be conducted, the influence of friendly and unfriendly spirits, of certain special life-giving plants, and of "vital" minerals, and the delicate balance between protective and destructive forces on which the maintenance of true health depends—all these factors form part of the pattern which make up the real background to the Chinese conception of medicine. As Dr. Hume says of the Chinese patient—

"His quest for health, the fortification of his body and spirit against hostile influences, are to be achieved, not by the immunities of physical and chemical biology only; but by bringing his whole being, his spiritual biology as well as the bodily, into adjustment with the forces of the universe."

A brief account is given, with illustrative plates, of some of the historical figures in the development of Chinese medicine, and of the classical textbooks and methods of practice which made them famous, while many amusing stories are told of the legendary powers with which a kindly tradition has credited them.

The Diabetic Life

(12th ed.) By R. D. LAWRENCE, M.D. Aberd., F.R.C.P. London: J. and A. Churchill. Pp. 246. 9*s*. 6*d*.

THIS edition contains only minor changes. A section on war-time precautions for diabetics, reprinted from the *British Medical Journal* is included, in which diabetics will find some helpful advice. The section on the relative value of urine testing and blood-sugar estimation in assessing the control of diabetes mellitus has been re-written and affords reliable guidance. Many workers will agree with the reference to the possible place of vitamin B_1 in the treatment of peripheral neuritis associated with diabetes mellitus, but the reference to the dosage as 1500 units daily for a month, without any indication of the mode of administration, is misleading. A few more recipes are included, though, in a war edition, one could have wished for more war-time suggestions. The food tables are brought into line with recent analyses. The protamine insulin compounds are still relegated to an appendix; in future editions they might well be included in the general text.

Treatment in General Practice

Vol. IV. *Surgery* (contd.) Republished from the *British Medical Journal*. London: H. K. Lewis and Co. Pp. 562. 16*s*.

THIS book contains 55 articles on various aspects of surgery by authors who are experts in their subject, and covers such diverse subjects as fractures of various kinds, circumcision, hæmorrhoids and sulphonamide chemotherapy in surgical infections. In such a collection of articles, personal observation, details of technique and unusual experiences find a place not usually accorded to them in textbook accounts of disease; and this helps to give the reader a fresh line of approach.

Pharmacology and Therapeutics

(3rd ed.) Edited by STANLEY ALSTEAD, M.D. Lpool, M.R.C.P. London: William Heinemann (Medical Books) Ltd. Pp. 557. 21*s*.

THE last English edition of this well-known textbook appeared in 1938. It has not been completely revised but has been brought up to date by the addition of an appendix dealing with the second addendum to the British Pharmacopœia and with sulphanilamide derivatives. The book is a practical guide to therapeutics and not a textbook of scientific pharmacology. The multitudinous diseases for which the various drugs have been used at one time or another are listed without much critical discussion or indication of how they came to be used for the diseases given in the list. Dr. Alstead in his editorial preface suggests that a full account of sex hormones and vitamins would be out of place in a textbook of pharmacology for medical students, since most medical students become general practitioners, and these subjects are, in fact, only briefly discussed in the pages which follow. Otherwise the book is a fairly comprehensive one.

THE LANCET

LONDON: SATURDAY, MARCH 8, 1941

MALARIA ON THE BURMA ROAD

THE opening of great channels of commerce overland in the tropics and the subtropics during the last 80 years has shown that the difficulties to be overcome are not only political, economic and engineering but also medical. Two papers by ROBERTSON[1] on the China-Burma highway illustrate this fact, and provide a new instalment of the history of the road which he began in our columns two years ago.[2] The proposal to connect Burma and China by road dates from 1860, but it was not until the outbreak of war between Japan and China in 1937, and the closure to China of the Pacific coast, that the urgent need for a motor road connecting China with the ports on the Irrawaddy River was fully appreciated and its construction undertaken. In spite of great engineering difficulties, lack of modern mechanical aids to construction and loss of many lives during the work, Chinese perseverance achieved a passable road by early 1939. In its central section it has to negotiate two great river canyons, each some 6000 ft. deep, set in a plateau 9000–10,000 ft. above sea-level. It descends the sides of each canyon by a series of hairpin bends flanked by precipices on one side and precipitous cliffs on the other, until at about 3000 ft. above sea-level it crosses the rivers by suspension bridges. At its western or Burma end the road descends by gradual stages to the notorious swampy valleys of the Chinese Shan State, known for centuries as malarial death-traps. The local Chinese migrate from them to the mountains at the onset of the rainy season when malaria is most rife. Owing to the rapid construction of the road its drainage is inadequate, and in the wet season torrents wash it away and landslides block it. At places the carriageway is a soft crumbling ledge in the face of the cliffs, and trucks are liable to crash through into the ravine below; accidents and delays are common in these difficult stretches. Convoys of transport lorries may be held up for days on end, often in remote places, and the personnel have to sleep in the wagons, short of food and unprotected from mosquitoes.

An army of drivers is continually passing from one end of the road to the other; labour has been mobilised and brought to the spot to deal with the repair and upkeep of the road; and the local Chinese, instead of migrating to the hills in the malarious season, stay in their villages to supply the market needs of the new influx of population. Depots for motor trucks, fuel, repair shops and ammunition-supplies have been constructed on sites chosen for geographical and other reasons quite unconnected with epidemiology; and the new immigrants are living in unsuitable houses, while the maintenance gangs are herded into primitive huts and caves. The result is that a heavy price is being and will have to be paid in the form of ill health chiefly due to malaria. Investigation of this problem has been the concern of Dr. ROBERTSON and his staff. A preliminary survey over the western end of the road showed that malignant tertian, simple tertian and quartan malaria were all prevalent, but that the first greatly predominated in the low-lying plains, while in the upper plains of high altitude simple tertian was the prevailing infection. But it is evident that the improvement in communication may lead to changes in the predominance of the various infections in the near future. Six anopheline mosquitoes have been inculpated as vectors of the infections, and of these the most important is *Anopheles minimus*, an insect so tiny that it can penetrate the few mosquito-nets at present in use along the road. The nets are inadequate in design, of unsuitable mesh, and in a bad state of repair. Quinine prophylaxis has been instituted for all workers in the transport system, but its issue has proved difficult for administrative reasons; and quinine prophylaxis is at best only a palliative in such a situation. The population of the surrounding districts consists not of a single racial group but of several different types; these include primitive tribes eking out a pastoral existence and avoiding contact with the Chinese, the agricultural Shan people whose language and customs again differ entirely from those of the Chinese, the immigrant Chinese settlers, and the floating Chinese population brought in as a result of the construction of the road. Investigation of malaria problems among the local inhabitants, particularly the more primitive, is difficult; the people are inaccessible, conservative and resent interference, and differences of language constitute a formidable barrier. There are tested principles, however, which it would be a mistake to ignore, including the error of allowing the new population to adopt the domiciliary habits of a malarious and partially immune population. Existing villages ought to be avoided, the new depots and camps should be erected on suitable sites away from swamps, and the buildings must be properly screened with netting against the entry of mosquitoes at night. Breeding-places of the principal vectors, especially *A. minimus*, must be attacked by drainage, oiling and Paris green. Adequate mosquito nets of suitable design and mesh must be provided, their intelligent use enforced, and health education of the whole population begun. Dr. ROBERTSON points out the great opportunity for a wise and far-sighted policy on the part of authority, and the steady toll of ill health and loss of life which will follow neglect. This highway, already supplying a vital need in China's resistance to Japanese aggression, will increase in value for commerce when the present troubles are over. If proper steps are taken now, when the road is young, it will become a safe highway from Burma to China.

1. Robertson, R. C. *Chin. med. J.* 1940, **57**, 57; *Trans. R. Soc. trop. Med. Hyg.* January, 1941, p. 311.
2. *Lancet*, 1939, **2**, 108.

CANCER AND PRECANCER OF THE STOMACH

AT least one grown person out of twenty-five is killed by gastric carcinoma, yet we are in no position to attack the disease; our war is one of defence. The stomach is secretly invaded before—and we cannot say how long before—the patient gets a warning sign. Our intelligence service depends on radiology, gastroscopy and gastric analysis; surgery is at present our only effective weapon. But if we can improve our tactical use of the knowledge we have we may gain ground even during this time of ignorance of causes. To do this we need full information about

the course of gastric cancer in large numbers of patients at various ages, some classification of the tumours which will justify prognosis in individual cases, and a knowledge of precancerous conditions of the stomach wall. The Mayo Clinic has provided the first in an analysis [1] of the histories of 10,890 patients with malignant lesions of the stomach, diagnosed between 1907 and 1938. Of these only 6352 underwent operations, of which 2840 were resections: showing that in only 1 patient in 4 was there a possibility of cure from radical treatment and that nearly half were seen too late for surgery—even laparotomy. The symptoms of only a little more than half these patients supported the textbook description of dyspepsia, loss of weight and decline. In a third the symptoms were those of ulcer, sometimes but not always followed by the classical symptoms of malignant disease. Among patients in whom removal of the growth was impossible, 25% had symptoms of ulcer rather than of carcinoma. Some 18% of all patients reported symptoms which had lasted five or more years, though it cannot of course be ascertained for how long these had been due to an actual malignant lesion. SCHINDLER [2] suggests that even the classic short history quite often disguises the truth; on closer questioning the patient may sometimes admit symptoms of chronic gastritis long preceding the recent terrifying months of decline which brought him to the doctor. The history, then, is often dangerously misleading. Analysis of gastric contents may fall equally short of textbook standards; the absence of free hydrochloric acid after a test-meal is a suggestive sign, but with many early cancers the hydrochloric acid is normal and even excessive. An increase of mineral chlorides in the stomach and persistent occult blood in the stools are significant, but do not ensure early diagnosis. CYTRONBERG [3] claims that the refractometric index, worked out at the University of Warsaw, gives reliable evidence of gastric cancer in 90% of cases, but his work will need to be confirmed by the experience of other workers. The Mayo Clinic report shows that a definite diagnosis of malignancy was made by radiology in 75% of cases in which the tumour was removable and that in 99% of these there was radiological evidence of some type of gastric lesion. It is noteworthy that of cases which seemed likely on radiological evidence to be inoperable in 20% the tumour could be removed This suggests that a radiological report of inoperability should never be accepted out of hand by the surgeon; there is always a 1 in 5 chance of error.

Early surgery undoubtedly gives the best chance of cure, but only about 3% of patients admitted to hospital survive longer than 5 years. This discouraging result tends to bring operation into disrepute; SCHINDLER suggests that if it were possible to distinguish which growths had a good and which a bad prognosis it would be possible to reserve surgery for those who would benefit by it, and thus accustom patients to thinking that if an operation was undertaken at all it offered a good chance of life; but it is difficult to see how operation could be withheld in unfavourable cases merely on the ground that the patient's chances were poor. He mentions BRODERS's classification, based on the microscopic appearance of the cells; but adds that in his experience some tumours which are poorly differentiated and appear to be growing fast are not in fact extremely malignant and that the converse may also be true. In any case, to make a preoperative prognosis based on the classification, biopsy would be necessary, and this is not yet practicable with the gastroscope. Nor has BORRMANN'S classification, depending on gross pathology, proved generally acceptable in deciding prognosis. BORRMANN recognises four types: (1) polypoid carcinoma, a mushroom-like growth accounting for some 2·3% of all gastric cancers; (2) an ulcer with a steep, sharply demarcated wall; (3) an ulcer with a wall at one side and a transitional slope at the other, infiltrating the mucosa; and (4) a diffuse infiltrating growth. In a series of 39 tumours grouped according to both BRODERS'S and BORRMANN'S classifications SCHINDLER found that the microscopic and the macroscopic findings by no means tallied. In his experience macroscopic type-1 tumours grow slowly and early removal gives a good prognosis. Type-2 tumours may double the thickness of the ulcer wall in a week, but do not become diffusely infiltrating, and metastases develop relatively late; this is the type in which a movable palpable tumour is present, and the radiogram shows the meniscus sign of CARMAN; yet operation may give satisfactory end-results. Type-3 and type-4 carcinomas show early progressive infiltration; SCHINDLER has never seen complete cure after resection of a type-4 tumour. At the Mayo Clinic, however, the microscopic grades (Broders) have been found to correspond closely with the curability of the patient. Further study, macroscopic and microscopic, coupled with gastroscopy should make it possible to assess operability much more accurately in a few years time.

Study of precancerous conditions is still incomplete and has not so far helped greatly in early diagnosis. Three diseases are suspect: gastric ulcer, gastric polyp, and chronic atrophic gastritis. Chronic irritation by peptic ulceration or gastritis, particularly in an atrophic mucosa, predisposes to malignant change. WALTON [4] believes that 9·5% of chronic ulcers become malignant and 17% of carcinomas originate in chronic ulcer. The end-results of resection for cancer developing from ulcer are worse than those of resection for primary malignant disease; PALMER [5] suggests that patients with gross ulcers and histamine-achlorhydria, or with ulcers of the greater curvature or questionable ulcers of the antrum, should be submitted at once to partial gastrectomy, on the grounds that these lesions are usually malignant. HERMON TAYLOR,[6] however, thinks that the two-view gastroscopic test gives more positive grounds for performing or withholding operation. BRUNN and GOLD [7] advocate operation if malignancy is suspected, even when unproven, and PALMER [5] advises the removal of all gastric lesions which it is known may result in carcinoma. But radical gastrectomy is too dangerous to be undertaken except on absolute evidence of malignancy and then should be carried out under favourable conditions; a long preoperative rest in bed can be used for gastric lavage and transfusion. SCHINDLER considers that resection of a benign ulcer

1. *Proc. Mayo Clin.* 1940, **15**, 625.
2. Schindler, R. *J. Amer. med. Ass.* 1940, **115**, 1693.
3. Cytronberg, S. *Rev. Gastroenterol.* 1940, **7**, 391.
4. Walton, J. *Lancet*, 1936, **1**, 1101.
5. Palmer, W. L. *Ann. intern. Med.* 1939, **13**, 317.
6. *Lancet*, Feb. 1, 1941, p. 131; see also p. 150.
7. Brunn, H., Gold, R. L. *Surg. Gynec. Obstet.* January, 1941, p. 31.

to avoid the development of carcinoma is hardly advisable. Though they are rare, he is suspicious of gastric polyps, recognising three types—pseudopolyps associated with atrophic gastritis, often precursors of carcinoma; round cherry-like polyps single or multiple, also associated with atrophic gastritis, and also tending to malignant change; and hard hyperplastic polyps which are uncommon and may or may not be precancerous. Polyps if small may not be detected in the radiogram, but gastroscopy reveals them; advanced polyposis gives a characteristic radiological picture of multiple small filling defects. SCHINDLER advises resection only in isolated polypoid gastritis of the antrum, a condition so rare that its existence has sometimes been questioned. BRUNN and GOLD report cases in which hypertrophic gastritis mimicked polyposis in the radiogram, and others in which carcinoma simulated gastritis and vice versa. They believe that chronic hyperplastic gastritis simulating cancer is commoner than is usually thought, and recommend laparotomy in doubtful cases, with resection at the same operation if a definite diagnosis cannot be made on sight. SCHINDLER also regards chronic atrophic gastritis as an important forerunner of cancer; and KAPP in Switzerland and USLAND [8] in Norway believe it precedes cancer in 15–17% of those who develop it. Such people thus have three or four times as much chance of developing cancer as healthy adults. Chronic hypertrophic gastritis, in which the mucosa is redundant and rugose, may also simulate cancer. Antral or chronic hyperplastic gastritis, in which there is atrophy of the glandular elements of the mucosa but hyperplasia of the surface and crypt epithelium, is believed to be precancerous; both hypertrophic and hyperplastic gastritis may be different stages in a progressive disease. The significance of the supposedly precancerous conditions is at present obscure, but their closer study may give us a valuable approach to the problems of early diagnosis and prognosis.

At present prognosis depends on many factors. Paradoxically, a longer history is more hopeful than a short one; at the Mayo Clinic 45% of patients for whom resection was possible reported symptoms of less than one year's duration; whereas in the group of those for whom only laparotomy or a palliative operation was performed the corresponding figure was 54%. Moreover in those patients in whom symptoms had been present for less than a year at the time of resection the five-year survival-rate was 25%, whereas for those whose symptoms had lasted for more than a year it was 32%. It seems clear that patients with longer histories had tumours of lower degrees of malignancy, less liable to metastasis, than those with short histories. Nor is the youth of the patient the unfavourable sign it is usually supposed to be; the higher malignancy of the young person's tumour is offset by his greater ability to withstand a radical operation. Among patients over 60 the hospital mortality-rate at the Mayo Clinic was above 20%, while among patients between 30 and 40 it was only 5%. It is noteworthy that among patients with a palpable abdominal mass the tumour was removable in 41% of cases, while in patients with rectal or cervical glands suggesting the presence of metastases only about 20% had gastric lesions which could be resected. WALTON has emphasised the same point over here; the large size of the mass should never be taken as a contra-indication to operation. Spread of carcinoma by lymphatic or peritoneal metastasis lowers the five-year survival-rate far more than direct spread of the tumour through the stomach wall to neighbouring structures. This means to the surgeon that a tumour which appears at first to be inoperable by reason of direct extension may, if it is completely removed and the patient survives, lead to a better end-result than a more easily mobilised tumour which has given rise to lymphatic spread. Among patients with no abdominal mass and no evidence of rectal or cervical metastasis the gastric tumour was removable in 50%. The operability of a growth can only be established by surgical exploration; gastroscopy or peritoneoscopy may reveal contra-indications to operation, but the degree of local and distant spread cannot be estimated with either instrument. On the other hand, gastroscopy is unsurpassed as a means of deciding between benign and malignant conditions, thus ensuring proper choice of treatment and permitting the surgeon to forestall malignant change.

8. Quoted by Schindler, R.

CALCIUM NEEDS OF THE ADULT

FOR many years calcium has occupied a prominent place in the nutritional world. Its fame has spread beyond the confines of clinic and laboratory until at last it has been awarded the honour of a special question in the House of Commons. The reason for this eminence is the Ministry of Food's decision to add calcium to the flour for the reinforced loaf. The controversy aroused by this proposal has received a fillip from an investigation by I. HARRIS and his colleagues,[1] who maintain that there may be reasons for reducing the food calcium but there are none for increasing it. Their results have, however, been questioned by MCCANCE,[2] who notes that in their calcium-balance experiments the amount of lime excreted in the urine invariably exceeded that passed in the fæces, and in four groups was more than 70% of the total output. This must be considered a unique finding in a series of so-called normal subjects, for other workers have agreed that on an ample calcium intake not more than 25% of the total amount excreted appears in the urine. We are entitled to more information about the general condition of the subjects of these experiments and the nature of their diets; of special interest would be some indication of the form—food or drug—in which 2·7 grammes of calcium per day was given. True, a positive calcium balance was found between the intakes of 0·39 and 0·58 g., figures which agree fairly well with the minimum value of 0·45 g. proposed by SHERMAN,[3] and the average value of 0·55 g. deduced by LEITCH,[4] but this is no proof of normality. HARRIS and his colleagues proceed to argue on the analogy of their work on protein metabolism that by continuing with low calcium intake equilibrium may soon be reached. It should not be necessary to point out that from the metabolic as from the chemical point of view nitrogen and calcium are not similar elements. Anyone who has carried out an investigation into calcium retention must be aware of the

1. Harris, I., Ireland, J. T. and James, G. V. *Brit. med. J.* Jan. 11, 1941, p. 49.
2. McCance, R. A. *Ibid*, Feb. 22, 1941. p. 276.
3. Sherman, H. C. Chemistry of Food and Nutrition, London, 1937.
4. Leitch, I. *Nutr. Abstr. Rev.* 1937, **6**, 553.

variations likely to occur from week to week. The calcium content of the previous diet and above all the general health and nutrition of the subject play an important part in determining the amount of lime retained, and in this connexion we should be told more of the 14 patients who retained more than 24 g. of calcium over a period of fourteen days.

We are told that there is no calcium deficiency among the patients attending Liverpool Heart Hospital. The detailed evidence on which this statement is based has not been published. Certainly this experience does not tally with that of MEULENGRACHT [5] who showed that osteoporosis resulting from insufficient retention of lime was not uncommon. In coming to a decision as to the prevalence of calcium deficiency, the evidence required to demonstrate such a state is of the utmost importance. The level of serum calcium is generally recognised to be of no value in determining the adequacy of calcium retention. The skeleton contains large amounts of lime which can be considerably diminished without any visible effect. SHOHL [6] has pointed out that only after a period of 5–10 years or longer may a continual loss of lime produce gross pathological disturbance. Before we could determine the incidence of calcium deficiency in the adult it would be necessary to carry out a large-scale and long-term investigation into the frequency of osteoporosis and its response to the administration of a diet rich in lime and vitamin D. What of the dangers of excessive calcium intake which the Liverpool workers fear if the calcium content of our diet is increased? They give us the old evidence of arteriosclerosis in the rabbit's aorta. This is a notoriously unreliable animal, but although they say that a number of rabbits have been kept on diets rich in calcium they give us analyses of the aortas of only two, and of only one control. If a few more rabbits had been kept on a low calcium intake atheromatous changes with an associated increase in aortic calcium might also have been discovered in them. The increase in lime in degenerated blood-vessels has little or nothing to do with calcium retention. Calcified arteries may be seen lying side by side with bone showing an advanced degree of osteoporosis. And it will be news to anyone who has worked in a poor-law hospital to hear that arteriosclerosis is not as common among the poor as among the well-to-do. As for the deleterious effect of excessive calcium intake on renal function, which HARRIS and his co-workers seek to demonstrate by a mathematical formula, SALVESEN [7] and GRAHAM and OAKLEY [8] showed that the administration of calcium salts had a beneficial effect on the renal function in patients with renal dwarfism. As MCCANCE says, the amount of calcium excreted in the urine accounts for much less than 1% of the total work done by the kidney.

Whatever the value of HARRIS's experimental work, his paper has served a useful purpose in encouraging others to tell us what is known about calcium needs. It seems that, while there may be doubt as to the minimal calcium requirements of the adult, there is certainly no evidence direct or indirect that large sections of the population are taking too much lime in the diet. Meanwhile we are confronted by a shortage of cheese, one of the richest sources of lime for the adult, and it seems an entirely sensible procedure to add calcium to our bread so as to ensure an adequate intake. That the added calcium will be efficiently utilised is demonstrated by the experience of pædiatricians who have obtained satisfactory retention of this element by adding it to soya-bean flour.

5. Meulengracht, E. and Meyer, A. R. *Acta med. Scand.* 1937, **92**, 584.
6. Shohl, A. T. Mineral Metabolism, New York, 1939.
7. Salvesen, H. A. *Acta med. Scand.* 1934, **83**, 485.
8. Graham, G. and Oakley, W. G. *Arch. Dis. Childh.* 1938, **13**, 1.

Annotations

SYMPTOMS FOLLOWING EXPOSURE TO BLAST

THE pheasant whose autopsy was described by Stewart, Russell and Cone [1] had received injury to the central nervous system, presumably by the blast of high explosive, and it was possible to fill in the picture by an account of its behaviour during life. It did not move when approached, gave no fear reaction, and showed a flexibility like that of a catatonic patient. Our Canadian colleagues also described how some human patients exposed to blast have been apathetic and indifferent, some have been depressed, and in others there has been evidence of focal nervous injury. They warn us against a repetition of the "shell-shock" error, that term so woefully misapplied in the last war, and suggest that on physical grounds they can visualise pathological and physiological alterations as varied as the symptomatology. The mechanism producing the damage might, they think, be the transference through the venous channels of a sudden great increase of pressure to the brain and spinal cord from the thorax and general body surface. This account called forth a letter from Mr. H. F. Buxton, describing the behaviour of other animals subjected to bombing. Rabbits hopped about aimlessly and could be picked up by hand, cows ceased to eat and had to be slaughtered, and a dray-horse was apparently "stunned" on two occasions and suffered from a mild paralysis afterwards; so that there seems no reason to doubt that blast can damage the central nervous system and interfere with function at any level. Thus the vital centres may be affected, so that death results, or mental changes may occur, or the anterior horn cells may be affected; and the many clinical possibilities thus presented will make it easy wrongfully to attribute some of the bizarre manifestations to functional disorder. These cases warn us to be careful in dismissing as functional some subjective symptoms or complaints when organic signs are absent. Fortunately there have been radical advances in diagnosis since the shell-shock period. We no longer diagnose psychoneuroses by exclusion and have almost forgotten the maxim "if you can't find an organic disease you must think of a functional nervous disorder." The classification and recognition of the psychoneuroses is now sufficiently systematised for the expert psychiatrist to invert the old maxim and say of a case without physical signs, "this disorder is not a psychoneurosis and therefore we must think of an organic disease." It is along such lines that we can now distinguish between an organic syndrome due to cerebral concussion and a psychoneurotic syndrome following concussion. Although there may be an overlap of symptoms, prognosis and treatment are different in the two groups and diagnosis is possible without slavish reliance on the presence or absence of physical signs. Syndromes following on blast will call for the same differentiation, and the observations on men and animals already recorded in our pages should help towards that end.

1. Stewart, O. W., Russell, C. K. and Cone, W. V. *Lancet*, Feb. 8, 1941, p. 172.

THE INACTION OF EXPECTORANTS

In the last twenty-five years our knowledge in most departments of respiratory medicine has advanced considerably. The state has taken responsibility for the tuberculous person, the skill of the thoracic surgeon has been increasingly developed in bronchiectasis and lung cancer, and industrial lung disease has received its fair share of attention; but bronchitis, that widespread and incapacitating disorder, has been signally forgotten. The reason is no doubt that the cause is mysterious and the treatment either expensive or unsatisfactory. It is natural, therefore, that we should have had recourse to the palliative effect of drugs, many of which have been routinely prescribed, with changes duly rung on them, year after year. It is disconcerting now to find doubt cast on the efficacy of the compounds on which faith has reposed for so long, although an honest and thoughtful outpatient physician of a chest hospital would confess that the information gave him no surprise. Dr. Alstead, in this issue, has recorded an investigation of the effect of ammonium chloride and ammonium carbonate on the sputum output in cases of chronic bronchitis. All the patients were submitted to a control period before the drug was administered in adequate doses, and the criteria taken to indicate successful action were an increase in the amount of sputum within 24 hours of giving the drug and the maintenance of the output at this level for at least 3 days. In very few of the patients was this result achieved, and Alstead was forced to the conclusion that neither the chloride nor the carbonate of ammonium possesses the expectorant action generally assigned to it; he had reported previously [1] a similar conclusion in regard to potassium iodide and ipecacuanha. Admittedly a substance, in order to qualify as an expectorant, need not necessarily possess the power of increasing the daily output of sputum; it can assist the patient by making the sputum less tenacious, so reducing the effort of coughing. The saline draught taken in hot water or even the early morning cup of tea are examples of this action, which is probably a reflex from the mucosa of an empty stomach. The mode of action of other substances, pharmacologically classified as "stimulating" or "depressing" expectorants, is not so clearly understood and we must agree with Alstead's opinion [2] that there is ample justification for a critical evaluation of the expectorants, especially now that at least one of the old favourites—squill—is hard to come by.

VITAMIN SWEETS

It was lately announced in the press that American friends of Great Britain were proposing to send us large quantities of capsules containing vitamin concentrates to supplement the diet of British children. Naturally we in this country were extremely grateful for this further evidence of American thoughtfulness. From the *Journal of the American Medical Association* [3] we learn, however, that in American medical opinion the zeal of the promoters of this scheme has outrun their discretion. The publicity agency for the British American Ambulance Corps stated that "vitamin sweets" were being prepared in great quantities for shipment to England. Each tablet was to contain so much vitamin A and B_1, riboflavin, ascorbic acid and vitamin D that six sweets a day would provide an adequate, though perhaps not optimal, dose of these vitamins. From inquiries set on foot by the J.A.M.A. it seems that the prescription was prepared by one who in the past has been associated with the promotion of a nostrum for Bright's disease and other ailments, that there is no evidence of the stability of the vitamins in such a preparation, and that the claim made by the publicity agency that it contains all the vitamins necessary to prevent deficiency disease would not be accepted by the A.M.A. Councils on Pharmacy and Chemistry and on Foods and Nutrition. Further, it is said that the six American authorities in the field of nutrition who had consented to serve on the committee to consider the plan for shipping vitamin concentrates to Great Britain had not endorsed or even been informed of the nature of the publicity circulated to the American press. These considerations are distressing to all concerned—to the British American Ambulance Corps, to the Ministry of Health which gratefully acknowledged the offer, and to the rest of us in Great Britain who would be sorry to look such a gift horse in the mouth. The questions still remain—Is there or will there be a shortage of available vitamins and inorganic elements in the food produced in and entering this country, and will the people make the best use of what supplies there are? There can be little doubt that a diet consisting largely of wholemeal bread fortified with calcium and of green and root vegetables, with a small modicum of milk, fats, meat and cheese, will suffice for adults. Whether the same is true for children is not certain. In any case it is questionable if people will eat this diet unless much more serious propaganda is attempted by the Ministries of Health and Food than hitherto, and we may be compelled to resort to vitamin concentrates as a war-time measure.

1. Alstead, S. *Lancet*, 1939, **2**, 932.
2. Alstead, *Edinb. med. J.* 1940, **47**, 693.
3. Jan. 18, 1941, p. 232.

FACTORS IN WOUND HEALING

"Every true surgeon cannot help being interested in wound healing." This remark, made by Dr. Allen O. Whipple [1] in his presidential address to the American Surgical Association, would appear superfluous were it not that surgeons still exist who take little interest in their patients after they leave the operating theatre. Brilliant work is thus sometimes spoilt through insufficient attention to the phases of healing. Dr. Whipple discusses two phases in this process: first, the lag period which in a clean incised wound should not exceed about four days. Various local factors may prolong it, such as the amount of damaged tissue and exudate present, the character of the vascular supply, and the nature and number of foreign particles, including bacteria. Systemic conditions also play an important part and it has been known for some time that a high protein diet accelerates healing while a high fat diet retards it. The intimate connexion between vitamin C and the healing of wounds is a matter of history (in an annotation last week we discussed the importance of vitamins in cases of fracture), and various investigators have shown that deficiency of this factor prolongs the lag period and delays what Whipple describes as the later "period of fibroplasia, characterised by a sudden and rapid increase in tensile strength." Whether such delay is due to defective maturation of the intercellular matrix or to a degeneration of the mesodermal cells of the supporting tissues has remained an open question. The recent experiments of Hunt [2] have carried us a step further. A group of guineapigs, maintained on a sub-scorbutic but otherwise well-balanced diet, were subjected to laparotomy and gastrotomy; a control group was similarly treated but given adequate doses of ascorbic acid. In both groups the wounds healed by first intention, but whereas the scars in the control animals were so shrunken and pale as to be almost invisible those in the sub-scurvy animals lost their scabs at a later date, were puckered and sunken, and showed a mauvish discoloration. The microscopical observations may be summarised as follows. In the sub-scurvy animals there was a failure to mature on the part of the mesodermal cells and the intercellular fibrillar material laid down by them; the healing of the wound as a whole was profoundly disturbed by the occurrence of hæmorrhagic effusions and defective phagocytosis.

1. *Ann. Surg.* 1940, **112**, 481.
2. Hunt, A. H. *Brit. J. Surg.* 1941, **28**, 436.

Further, deprivation of vitamin C after healing had been completed led, in 2–3 weeks, to regression of the normal maturation processes in the wounds, followed by spontaneous rupture. Although the guineapig is known to be more susceptible to scurvy than man Hunt finds clinical evidence that the results of his experiments are in some measure applicable to human subjects. An analysis of 28 unselected abdominal surgical cases which had come to necropsy shortly after operation showed a considerable degree of correlation between the histology of their wounds and the estimate of ascorbic acid in the tissues as gauged by the Szent-Györgi reaction. Thus among those surviving operation for longer than a week the most deficient in vitamin C showed the poorest production of collagen in the wounds. An experiment performed on a healthy human subject showed, however, that a short-lived deprivation of vitamin C (in this instance 3 months) did not interfere with the normal healing processes. In Crandon's [3] experiment on himself a wound in the back healed normally after 3 months on a scorbutic diet, when the incised muscle contained no vitamin C, but when a similar wound was made after 6 months on the same diet the skin united but the deeper tissues had not healed at all after 10 days, owing to a lack of intercellular substance and capillary formation; healing proceeded normally as soon as ascorbic acid was given.

In experiments of this kind, however, where a healthy subject is suddenly deprived of all vitamin C, the interference with healing may not be as great as in people who have experienced a partial deficiency of the vitamin over a number of years. There can be little doubt that many hospital patients, especially those with long-standing gastro-intestinal disorders, are deficient in vitamin C when they come to operation. At the present time, when citrus fruits and other natural sources of the vitamin are lacking, the deficiency must be still more prevalent. Hunt recommends the administration of 1000 mg. of ascorbic acid daily for 3 days to produce saturation and 100 mg. daily to maintain it. It should be given intravenously or intramuscularly when circumstances preclude the oral route. His indications for this form of therapy are when clean and quick healing of the wound is particularly desirable, in major abdominal operations when a hollow viscus has been opened, when post-operative complications are anticipated, where there is evidence of a nutritional deficiency, and in all cases of serious injury.

VACCINATION AGAINST TYPHUS

WITH the rumours that epidemic typhus is raging among the Italian troops in Albania and the non-combatants in Poland, the question of large-scale vaccination against this disease looms up again. The rapid progress that has been made of late in the culture of the rickettsias gives promise of producing safe and efficient vaccines. Blanc and Barncoud,[4] and Nicolle and Laigret [5] in Tunis, claim to have used a vaccine of attenuated living murine virus successfully on a large scale. But there is no definite proof that the murine virus vaccine completely protects against the epidemic strain. Also, such a vaccine is dangerous especially in war-time where there may be a lowered standard of personal cleanliness, for not only may fever be caused in those inoculated but an epidemic may be started among the non-protected population by infecting lice with typhus. The new methods of agar-slant tissue culture, pulmonary inoculation in mice, and yolk-sac inoculation in the developing chick embryo provide sufficiently large numbers of rickettsias to be used in a formolised or phenolised vaccine. Durand and Giroud [6] have used formolised rickettsias from mouse lung to make their vaccine of which five inoculations at weekly intervals are necessary. The agar-slant tissue culture developed by Hans Zinsser and colleagues [7] provides a means of preparing large quantities of effective vaccine, and has been tried out in America and China on a few humans. In 1938 Cox [8] reported that the rickettsias of Rocky Mountain spotted fever, murine typhus, classical typhus, fièvre boutonneuse and Brazilian spotted fever would develop profusely in the yolk-sac of the developing chick embryo. Using this method of culture he has reported [9] the production of a phenolised vaccine, one dose of which protects guineapigs against a later infection with epidemic typhus. Later Tchang and Mathews,[10] using Cox's method, prepared a vaccine from their Chinese strain which immunised guineapigs and has been inoculated into 40 people in Peiping, but the results are not yet available. Gear [11] has used a modification of Cox's method to prepare vaccine, from a South African strain of epidemic typhus, which has proved highly satisfactory in protecting against experimental infection. After trying other methods, Gear concludes that this is the simplest, and one worker alone can make large quantities of vaccine. Pijper and Crocker [12] have brought forward evidence to show that the South African epidemic typhus may not be identical with the classical European strain, so it is probably advisable to use the local strain to secure the best results. Hudson [13] has reported on the use of purified suspensions of rickettsias from the lungs of rats and white mice in a macroscopic agglutination test. The lungs provide large amounts of rickettsias and the test is simple to carry out. Provided that the agglutinating and neutralising antibodies are the same this should provide a ready means of ascertaining the effectiveness of the vaccination in the different countries in which it is being tried.

3. Crandon, J. H., Lund, C. C. and Dill, D. B., *New Engl. J. Med.* 1940, **223**, 353; summarised in *Brit. med. J.* March 1, 1941, p. 311.
4. Blanc, G. and Barncoud, J. *Bull. Acad. Méd. Paris*, 1933, **110**, 274.
5. Nicolle, C. and Laigret, J. *Arch. Inst. Pasteur. Tunis*, 1936, **25**, 40.
6. Durand, P. and Giroud, P. *Ibid*, 1940, **29**, 24.
7. Zinsser, H. Wei, H. and Fitzpatrick, F. *Proc. Soc. exp. Biol. Med.* 1937, **35**, 84.
8. Cox, H. R. *Publ. Hlth. Rep. Wash.* 1938, **53**, 2241.
9. *Ibid*, 1940, **55**, 110.
10. Tchang, J. and Mathews, G. B. *Chin. med. J.* 1940, **58**, 440.
11. Gear, J. *S.A. med. J.* 1940, **14**, 476.
12. Pijper, A. and Crocker, C. G. *Ibid*, 1938, **12**, 613.
13. Hudson, N. P. *J. inf. Dis.* 1940, **67**, 227.

FOUR vacancies on the Council of the Royal College of Surgeons of England, occasioned by the retirement in rotation of Mr. A. H. Burgess, Mr. H. S. Souttar, and Mr. V. Zachary Cope, and by the death of Mr. R. C. Elmslie, will be filled at an election on July 3.

PRACTITIONERS called in to attend naval ratings who fall ill when on leave are asked to certify that the man is unfit to travel; otherwise he should return to his ship or go to a naval hospital for treatment. The procedure is explained on the back of the leave ticket.

Surgeon Rear-Admiral SHELDON DUDLEY has been appointed medical director-general of the Navy in succession to Surgeon Vice-Admiral Sir Percival Nicholls who retires in July.

WE regret to announce the death on March 3 of Dr. T. A. ROSS, formerly medical director of the Cassel hospital for functional nervous disorders. He was in his 66th year.

IN the *Scottish Geographical Magazine* for November, 1940, Dr. Douglas Guthrie reprints a lecture he had given to the Geographical Society on ancient Greece and the healing art. He has put the known facts together pleasantly enough, and, a grace for which we owe him thanks, has abstained from those fruitless speculations which too often deform such articles. The lecture should be of value to anyone who wishes to interest his men in the history of the Eastern Mediterranean.

Special Articles

THE PSYCHOPATHIC TENTH

BY STEPHEN TAYLOR, B.Sc., M.D. Lond., M.R.C.P.

THE philosophically minded doctor, by which I mean one who examines life rather than one who accepts it philosophically, must constantly find himself in a quandary. In the practice of medicine one sees oneself battling continuously with fate, and often altering successfully what the gods have apparently ordained; in research, on the other hand, and particularly in psychiatric research, one must inevitably assume a complete chain of causality. Just as the heart rhythm depends, among other things, on the ions in the blood, so mental behaviour depends on constitutional and environmental factors. Our actions are not a happy-go-lucky affair depending on a mysterious free will but are the product of our reasoning faculties and our emotional state. Our reason, depending on our innate intellectual capacity and our total intellectual experience, may counsel one course of action; our emotional state, equally depending on our constitutional emotional make-up and our total emotional experience, may confirm this, or adopt a contrary line. In the latter event, the resultant action will depend on which of the two is the stronger. Such a completely determinist picture is an inevitable corollary to psychiatric research, whether Freudian or Kretchmerian. The minor dispute as to whether environment or constitution is the more important in determining conduct recedes into the background.

At first sight it might be thought that such a universe, with free will as a delusion and causality complete, would act as an inhibitor of striving, as a destroyer of humanity and as breeding-ground for atheism. Practical experience shows that this is not so. Determinist physiologists have striven as vigorously and humanely as vitalists, and often to more effect. And astrophysicists who see the cosmos as an ordered thought in the mind of its Creator have been as seriously devout as any orthodox divine. The psychiatric answer to this apparent illogicality is, of course, that our striving, our humanity and our faith are as much determined as everything else. We cannot be other than we are; and if at times we sit back with a feeling that we have, by force of personality or chemotherapy, prevented the inevitable, both our success and our pleasure after the battle are but links in a causal chain of which we see only a part. Free will is a delusion, but a useful convention in everyday life.

CRIME AND CAUSALITY

This apparent mental dichotomy is nowhere better illustrated than in the civil and psychiatric attitudes to crime. The subtleties of psychopathology behind the average criminal act are still too obscure even to the psychiatrist to carry any weight in a court of law. But the following case makes the point clear.

A man of 27 attacked and severely injured a girl of 23 in a country lane. There was no sexual assault, and when asked why he did it he said he did not know. His temperament was obviously excitable and explosive, and the question of epilepsy was raised. There was no history of fits from either the patient or his family. His nature had, however, always been quarrelsome and violent, and he had a bad work record. An electroencephalogram showed a typical idiopathic epileptic focus.

We need not concern ourselves with the actual processes of the law in this case. The man was an epileptic who had never had a fit. In all probability his crime represented an epileptic equivalent. Should he then be blamed and punished for his act? Assuming that the law refused to accept an electroencephalogram as evidence of epilepsy, since no fits had occurred, the man might be condemned and sent to prison for ten years. At the end of this time, assuming he had had no fits, he would be discharged just as likely to perform another uncontrolled act of violence in an epileptic equivalent. The sentence would neither cure the patient nor deter other epileptics. The logical procedure, both socially and psychiatrically, is neither to blame nor to punish such a person, but to confine him to an institution where he can do no harm to society until he is either cured or dead. Note that, in the strict sense of the term, this patient was not insane. He was neither deluded, hallucinated, depressed nor elated. For a brief space of time he "lost control of himself," but this differed from losing one's temper only in degree and not in kind.

What applies to this patient applies equally to all others who perform criminal acts. Since free will is a convention only, in the scientific study of crime it must be neglected. The question we must ask ourselves in any particular case is not "Is the prisoner guilty, and if so, how severely should he be punished?" but rather "Is the patient curable of his tendency to social misconduct?" If a bad family history and a personal history of recidivism indicate that cure is unlikely, then confinement for life in an institution for such incurables is the only logical procedure. If, however, he is curable, no matter how terrible his crime, he should receive institutional treatment until he is cured. Bearing in mind the inevitable chain of causality behind the conduct of everyone, no other course is humanely possible. Even assuming that punishment is a deterrent to crime (and all the evidence goes to show that it is not), removal of the criminal from society until cured of his criminal tendencies is likely to be quite as deterring as gaol.

There are, of course, many offences against the law where only a salutary warning is required. For these there can be no hard and fast tariff. A motoring offence may be a trivial mistake, or symptomatic of a severe derangement of social values and call for long institutional treatment. Suppose, for example, the epileptic referred to had confined himself in the first instance to shouting abuse. If the presence of epileptic equivalents was established, and if sufferers from these were known to be liable to commit acts of violence, then, even though his misdemeanour was trivial, his treatment should be drastic. At the other end of the scale, the man who can obtain neither work nor relief (if such there be), and is driven by hunger to steal a loaf of bread, needs neither warning nor treatment. Treatment should rather be applied to the society which permits him to reach so desperate a pass.

MENTAL ILLNESS AND CAUSALITY

The sensational nature of crime has given it a social importance out of all proportion to the actual size of the problem. Criminals are rare, and recidivist criminals are rarer still. This is in part a testimony to our police force and our social reformers, but still more to our national social conscience, which has treated crime as antisocial for hundreds of years. The problem of major and minor mental illness, on the other hand, is still enormous. It is a popular speculation among those who seek subscriptions for psychotherapeutic clinics that about a tenth of our population stands in need of psychological treatment. There is some evidence that this figure is roughly correct, though whether these patients can be greatly helped by our present methods of psychotherapy is another matter. A small proportion of this concourse are grossly insane or mentally defective, but the great majority are what is popularly known as "neurotic."

It is inevitable that those who see much of "neurotics," whether as patients or as acquaintances or relatives, should at times be irritated by them, for the essential feature of the neurotic's illness is a failure to make a complete social adjustment. In war-psychiatry this irritation at times flares up and indignant service doctors put out vigorous pleas for the "treat 'em rough" school. Such reactions are to be expected. Service psychiatric patients are failing in the most primitive test of manhood, the school of war, and those in whom the herd instinct is strongest have even less toleration for those who fall in the rear than for those who break away in the van. These patients are often, though by no means always, cowards, but they are not to be blamed on this account any more than the criminal is to be blamed. Their cowardice is a symptom of their state of mind, which itself is the product of a weak emotional make-up and an overpowering environment. It was a common observation that in the later phases of the last war the type of psychiatric patient was much finer than in the earlier phases. The weakest cracked

at the distant sound of battle; those a little stronger survived a few rounds; and finally even some of the really strong reached their breaking point. Causality and determinism, then, operate in war-time psychiatry just as clearly as in peace-time penology.

Although the neurotic patient is a burden to himself and others, he is devoid of blame for his condition. There can be few more pitiable conditions; yet the practical experience of many psychiatrists is that these patients respond badly to pity. Pitying the poor neurotics is, as a rule, bad for recipients and donors alike. Bullying them is, however, equally unsatisfactory therapeutically, besides being degrading for the doctor. The best recipes for therapy are along the middle course of kindly firmness; but even these, the dispassionate observer must admit, are often no more successful than masterly inactivity and time. But a discussion of psychotherapy is beside the point. Here I seek only to establish that the neurotic is an irritating but blameless victim of circumstances, for whom pity is right but for whom pity must rarely be shown.

NOMENCLATURE

A hundred years from now, the social historian who studies the serious fiction of the 1920s and the 1930s will probably remark on the extraordinary preoccupation of authors with neurosis. Psychopathology, mainly Freudian, has dominated literary life for two decades, and the historian may seek to correlate this with the political instability of the age. For the non-medical intellectual, Freudian psychopathology has a double charm; it explains the irrational rationally, and it glorifies sex. So, among contemporary philosophers and writers, neurosis has become a mark of distinction rather than a disability to be overcome. They think it no shame to lead a weirdly patterned sex life, when this is really a symptom of emotional failure rather than of intellectual freedom.

But in these two decades psychiatrists, both Freudian and otherwise, have come to realise that Freudian psychopathology is by no means all of the picture. Indeed there are many who think that in the causation of mental illness it plays little part, though its importance in determining the nature of individual symptoms is not denied. With this realisation has come also a clearer understanding of normality. We each of us have our manic, schizoid, obsessional and hysterical quanta, just as we have also our libido, our Œdipus complexes, and our narcissism. But to talk and think continuously about these is as foolish as to talk and think continuously about our bodies. The thing which really matters is what we do with them. Writing Gray's Elegy or taking Quebec is a socially valuable achievement; continuous introspection is not.

The intellectual glorification of neurosis is one good reason why the term should be dropped from psychiatry. If a substitute can be found which carries with it no more cachet than infantile paralysis or mental deficiency, thinkers will in time take their cue from practice, and the glorification of abnormality will cease. There are, however, other and more immediately utilitarian reasons why we should cease to speak of neuroses. Pity is as bad for non-intellectual neurotics as public introspection is for intellectual ones. Yet among our everyday patients the label "neurosis" is still often a passport to pity and self-pity. A name which puts the neurotic in his place without putting out his nose would be a real practical help. If, at the same time, the name suggested that the illness was a disability which it was his duty to try and overcome, or at least make the best of, a double purpose would be served. There are two further purely medical reasons for such a change. In the minds of many doctors the term neurosis still implies an illness which is caused mainly psychologically by environmental traumata, when in fact the root of the trouble is usually a constitutionally poor emotional make-up. Lastly, many psychiatrists deplore the suggestion that the neuroses differ qualitatively from the psychoses, and in the persistence of the term they see a danger of perpetuating a false belief. The full evidence on these two points is given in a previous paper (Taylor 1940).

Until recently no satisfactory alternative name has been offered. "Minor psychosis" was a clumsy and rather misleading effort. But now there is a growing body of opinion in favour of the term "psychopathy," with "psychopathic" as a substitute for "neurotic" and "psychopath" for "neurote." There are manifold reasons in favour of this change. To glory in one's psychopathy is far harder than glorying in neurosis. To suffer from psychopathic illness is to excite pity but not a display of pity. Psychopathy suggests that something more than a fright in childhood or an overdose of jealousy is at the bottom of the trouble, and further, the border between psychopathy and psychosis is not too clear cut. In German psychiatry, it has been the practice for the last decade to include neuroses under the term "psychopathic personality." In England, a more conservative practice has been usual. Curran and Mallinson (1940) use the term for patients who have "a lifelong history of maladjustment, shown by a bad work record or repeated antisocial acts, the patients coming under observation because these characteristics have persisted or increased." The operative word here is "lifelong"; if it is omitted the whole gamut of "neuroses" is included. The hysteric, the hypochondriac, the severe obsessional and even the anxiety state often have bad work records, and are often sufficiently antisocial to wreck homes, marriages and families. Even allowing for the "lifelong" connotation in the present usage of "psychopathy," it is still of general application; for the more the past histories of those with "neurotic" breakdowns are examined the more does it become apparent that the illness is not usually an isolated event but an exacerbation, often environmentally conditioned, of lifelong emotional or mental abnormality. In America the term has occasionally been used to cover all forms of mental illness, but this is by no means usual (Muncie 1939). In the future we may expect to hear more and more of hysterical, obsessional, anxious and depressed psychopaths, while the psychopathic personalities of today become "mixed," "criminal" or "antisocial" psychopaths. Such a usage will cover brief exacerbations or attacks as well as the more long-standing disabilities.

DEFINITIONS

I have already pointed out that many psychiatrists are unable to accept the view that there is a clear-cut dividing line between major and minor mental illnesses, between psychosis and psychopathy. A careful study of the normal personality and psychopathy will convince most people that here also the dividing line is blurred. Many excellent people, of great value to society, behave in a way which seems psychopathological, yet they cannot be described as psychopaths. Mental illness appears to differ from most physical illnesses in that its symptomatology is rather a caricature of normality than the appearance of abnormal features de novo. The pathological processes underlying these symptoms are, of course, often those of physical pathology—infections, degenerations, toxæmias, exhaustive states or constitutional anatomical or biochemical variations. But if the symptom pictures are to be intelligible they must be approached from the angle of normal mentality and personality (Taylor 1940).

At what point then does normality pass into psychopathy, and psychopathy into psychosis? I am convinced that the answer must be social and not medical, with a pragmatic criterion, and with conduct as the touchstone. I therefore propose the following definitions:—

1. A *psychopathic illness* is an abnormality of the mind sufficient to make its possessor a *nuisance* to himself or other people. Nuisances are, of course, often socially valuable. A glance at the pages of any history book will convince one that the same applies to psychopaths. When we have a sure method of treating psychopathy, it will be necessary to decide which cases call for treatment. My own view is that the decision must rest with the patient. Unless he wants his kinks straightened out I think we have no right to straighten them. As for the people to whom he is a nuisance, it is up to them to cope with the situation—and usually the simplest move they can make is to remove themselves from the psychopath's environment.

2. A *psychotic illness* is an abnormality of the mind sufficient to make its possessor a *danger* to himself or other people. It may well be asked at what point a nuisance becomes a danger; but the line between psychopathy and psychosis, as has already been pointed out, is not a sharp one. Every

case has to be assessed both on its merits and on the social environment. The assessor may be the doctor, or the judge and jury. Any attempts to define clinical symptoms pathognomonic of psychosis are doomed to failure. Many otherwise amiable cranks suffer from delusions. Hallucinations occur not only in psychotics but also in psychopaths and even in completely normal people. A large number of admirable but simple souls are as devoid of insight into their simplicity as the schizophrenic is into his thought processes. The line one draws, then, is that of danger. And on this account, if persuasion to receive treatment fails, compulsion is essential. Clearly, this definition covers more than the conventional manics, depressives, paretics and so on. It covers the self-mutilating hysterics, already often certified under other labels. It covers criminals, in spite of the fact that the evidence of their psychoses is to be found in their conduct rather than their speech. And lastly, it covers political adventurers, who, profiting by national economic ill-health, are able to indulge in megalomanic wars and sadistic persecutions, when their proper place is surely the chronic ward of the mental hospital.

At last we are in a position to view our psychopathic tenth in their true perspective. Of this great mass of people, a small proportion carry with them abnormalities which are the seeds of genius. But the great majority are the weaker brethren who have started life with only half a talent. They are a burden which every community has to bear—the grumpy, the worrying, the nagging, the overparticular, the selfish, the humourless, the unsatisfiable and the cowardly. In times of trouble, the uniformity of their behaviour makes many of us see them for the first time as a coherent group. They flood the service psychiatric hospitals. They crowd into the deepest shelters that they may live through the blitz to grumble at the peace. In quieter times, they fill our outpatient halls; they drink medicines; they collect certificates; they cost the state a lot of money and society a lot of misery. We may occasionally be tempted to despise them, but it is not their fault they are what they are. We must pity them, but for their own sake we must not show our pity. As doctors, we can help them a little, but less than we would. As citizens, we must make sure that they are neither abused by those who fail to understand their plight nor allowed themselves to abuse the tender feelings of their friends. In our dealings with them, unless we display toleration, kindness and above all understanding, we shall be stepping away from a free, civilised and rational world back to the days of darkness, torture and ignorance.

REFERENCES

Curran, D. and Mallinson, W. P. (1940) *Lancet*, **2**, 738.
Muncie, W. (1939) Psychobiology and Psychiatry, London.
Taylor, S. (1940) *Lancet*, **1**, 677.

UNITED STATES OF AMERICA

FLUORESCENT STAIN FOR TUBERCLE BACILLI

AT the annual meeting of the Central New York branch of the Society of American Bacteriologists held recently Dr. E. K. Kline and Mr. Raymond Leach described a new method of staining tubercle bacilli, which is said to give results with direct smears comparable to those previously obtainable only by concentration methods. The Ziehl-Neelsen technique is followed to the decolorisation of the acid-fast bacilli which are then stained with auramine. So stained they are illuminated with ultraviolet light from a suitable source when they are seen to glow brilliantly against a dark background. Although this new method is still on probation it is being watched with a great deal of interest here.

VITAL STATISTICS OF 1940

The earliest indications of last year's vital statistics come as usual from the Metropolitan Life Insurance Company. From their observations it appears that our birth-rate will be definitely higher than that for 1939. It is not expected that the death-rate will be down to the figure of 10·6 which last year established a low record in this country, but 1940 will come quite close to this rate. Although there will be some natural increase in the population the statisticians point out that the age-distribution of the population is still favourable to a high birth-rate and that the balance between fertility and mortality is actually in a delicate equilibrium—just adequate to maintain our population.

DRAWBACK TO POPULARITY

Dr. Malcolm Goodridge, re-elected president of the New York Academy of Medicine for a two-year term, delivered his inaugural address on Jan. 2. The academy had received recognition from the foundations as being something more than a local institution. Curiously enough this very support, Dr. Goodridge indicated, has got the academy into difficulties. Responsibilities have been undertaken and a demand for service has been created and stimulated and has grown with its satisfaction, so that now funds are insufficient properly to support the extensive library and to carry on other educational functions. The committee on medical information, for example, has received during 1940 a thousand inquiries from the press and two thousand from lay and commercial organisations and from individuals. The committee conducts a radio programme and has carried out research on radio broadcasting of medical information. It is also responsible for the popular "Lectures to the Laity" given each year. To meet growing demands for service Dr. Goodridge proposes a five-year fund raising programme to increase the endowment of the academy by $1,250,000. Not unconnected with this movement is the establishment of a lay council or advisory committee consisting of business men whose names are known throughout the country.

IRELAND

VITAL STATISTICS OF 1939

THE report of the Registrar-General of the area under the jurisdiction of the government of Eire for 1939 gives the estimated population at the middle of the year as 2,934,000, of which 1,503,000 were males and 1,431,000 females. The total has fallen by 34,000 since the last census in 1936, but the excess of males over females remains unchanged. The marriages registered in 1939 numbered 15,204, being greater by 311 than in the previous year, and 1164 over the average number for the decennial period up to 1938. The marriage-rate for the year was 5·18 per 1000 of the population, whereas the rate for Northern Ireland was 7·09, for England and Wales 10·61, and for Scotland 9·24. The birth-rate, 19·11 per 1000 of the population, was lower than that of the previous year, which was 19·38, and the rates for 1939 in Northern Ireland, England and Wales and Scotland were respectively 19·49, 14·94, and 17·36. The illegitimate births were equivalent to 3·18% of the total births, the percentages in Northern Ireland, England and Wales, and Scotland being 4·70, 4·19, and 5·97.

The death-rate rose from 13·63 per 1000 population in 1938 to 14·22 in 1939, but the latter figure is identical with that for the decennial period ended 1938. Of the deaths recorded, 20·5% were stated to be due to heart disease, 9% to cancer, 7·9% to tuberculosis, 5·9% to cerebral hæmorrhage, 4·7% to pneumonia, and 1·6% to bronchitis. The tuberculosis death-rate per 1000 population for 1939 was 1·13, compared with 1·09 for 1938—the lowest on record—and 1·23 for the period 1929–38. While the tuberculosis death-rate shows a gradual if interrupted fall for many years past, that for cancer shows an equally gradual and less interrupted rise. As regards tuberculosis the death-rate is always much higher than that in Great Britain and a little higher than that in Northern Ireland, while for cancer the reverse is the case. The cancer rate in Eire is the lowest in the British Isles, though the rate in Northern Ireland is only slightly higher. It is probable that the rates calculated for Great Britain are more accurate than those for either part of Ireland, for Ireland has a higher proportion of deaths the cause of which is uncertified. At the meeting of the Royal Academy of Medicine in Ireland on Jan. 24 several speakers mentioned the rarity of carcinoma of the cervix in Ireland. Dr. J. S. Quin said that only 10–15 cases a year were seen at the Rotunda Hospital, and Dr. Bethel Solomons put the low incidence down to the absence of meddlesome midwifery. But in an exceptionally modest people carcinoma of the cervix must be particularly likely to be overlooked. If one were to judge the incidence of diabetes from the recorded deaths from that disease it

would be much lower in Eire than in any other part of the British Isles, the rates being, for Eire 8·8 per 100,000 of the population, for Northern Ireland 12·9, for England and Wales 18·4, and for Scotland 16·4. Here again some of the differences is probably due to variation in the accuracy of diagnosis.

The rate of infant mortality was 66 per 1000 births, compared with 67 in 1938 and an average of 69 for the years 1929–38. The rates in Northern Ireland, England and Wales, and Scotland were 70, 50, and 69. A comparison of the curves of infant mortality for these several countries in the last fifteen years shows a remarkable contrast. The rate in Eire is approximately the same in 1939 as in 1925; in Northern Ireland it has fallen from over 86 to 70; in Scotland it has fallen from over 90 to 69; in England and Wales it has fallen from 75 to 50.

In 1939 there were 910 deaths due to violent or external causes, 50 less than the average for the previous ten years. Of these, 80 were due to suicide, 15 to homicide (including infanticide), 8 to war wounds, and 1 to execution; 774 were accidental, and the cause of death in 32 was unstated. Of the cases of suicide 15 were by poisoning, 20 by hanging or other method of strangulation, 17 by drowning, 15 by cutting or piercing instruments, 5 by the use of firearms.

From a rather belated report for 1938–39 of the Department of Local Government and Public Health of Eire we learn that in 1938 for the first year in history no case of typhus was notified. Typhus had been endemic in the remote West of Ireland from time immemorial, but it had ceased to be epidemic some years ago though small outbreaks and sporadic cases occurred with diminishing frequency until 1938. Notifications of typhoid shrank from 413 in 1937 to 254 in 1938, but those of diphtheria increased from 2511 to 2983. Tuberculosis mortality fell to 1·09 per 1000 population, the lowest rate recorded and less than half what it was in 1908. The highest mortalities were: Dublin 1·47, Cork 1·41, Waterford 1·32. High rates were also recorded in the counties of Wexford, Westmeath and Louth; the lowest in co. Longford. Infant mortality was highest in Waterford (99) and lowest in Leitrim (39).

SCOTLAND

ACTION OF DRUGS ON THE UTERUS

In his Honyman Gillespie lecture in Edinburgh on Feb. 20 Prof. J. A. Gunn said that of all the organs in the human body the uterus normally undergoes the greatest anatomical and physiological changes, and it has lately come to be recognised that the action of drugs on the uterus varies according to the state of its activity. Research into the actions of drugs depends on the evolution of a method for measuring the results. At first, after the old conception that the uterus was a passive organ taking no part in parturition had been abandoned, activity of the organ could only be assessed by inspection and palpation. A further aid was the fact that the onset and cessation of pain corresponded more or less to contraction and relaxation. It was not until 1872 that, by the method of external hysterography, the first permanent record of uterine contractions was published. The method had many drawbacks, for the instruments used were unwieldy and expensive and voluntary movement of the patient might obscure the results. Internal hysterography, while overcoming these disadvantages, has its own failings. The introduction of a foreign body into the uterus is dangerous, and also sets up contractions on its own account. A third method which is available is the observation of the effect of drugs on a strip of uterine muscle suspended in a physiological medium.

Two groups of drugs are of particular interest in relation to the uterus, those which cause contraction, and the anæsthetics. Of the former group ergot is the most important. Its main use is in the puerperium. The extract of ergot is water soluble, and when the first two active principles, ergotonine and ergotamine, were isolated they were found to be relatively insoluble in water and their physiological activity to be minimal, but it was proved by internal hysterography that liquid extract of ergot was active. These apparently inconsistent results led to further research and the isolation of a true water-soluble principle, the highly active ergometrine. With regard to the posterior pituitary extracts some important facts have been demonstrated. Its action on the whole simulates that of ergot. Pitocin is active on the pregnant uterus, its activity increasing as pregnancy advances, while pitressin acts only on the non-pregnant uterus. The active contractions of the uterus are only seriously affected when full surgical anæsthesia is reached; at a level at which analgesia is produced they are hardly altered. The contractions are not affected by nitrous oxide even at full anæsthesia, but the tone is much increased and this is not a satisfactory anæsthetic to use if surgical interference is contemplated. Hypnotics as a rule produce an analgesic effect without altering the contractions. Chloral hydrate and sodium amytal, besides being analgesics, appear to soften the lower segment. If this is the case they are a definite aid to the uterus in expelling the fœtus.

THE CARE OF CRIPPLES

In a recent address Prof. J. M. Mackintosh, chief medical officer to the Department of Health for Scotland, discussed the future development of orthopædics in relation to children in Scotland. He said that evacuation taught many lessons and provided many great opportunities. Nothing could have shown more clearly the enormous value of nursery schools. If we had had more nursery schools when evacuation started we should have had a mighty lot less trouble. Evacuation also showed the value of getting children into the country for more than an occasional fortnight. He looked forward to a time when the country school will be part of the normal education of all children, not merely the delicate children. The department has built a considerable number of hospitals and has adapted a great many others. When the war comes to an end some of these will have to be used for pensioners and some to make up the shortage of beds which has been notorious in the general hospitals for some years. He suggested that some part of them should be used on a regional basis for the care of cripples. In England there are over 40 voluntary orthopædic hospitals with surrounding clinics. In Scotland there is only one, the Princess Margaret Rose Hospital, and it has developed an orthopædic system on the English model. A few municipal hospitals are doing orthopædic work, but in general there has been little development in the care of cripples. They could not bring all the cases into the Princess Margaret Rose. Each region should look after its own cripples, so that each would have its own country hospital and surrounding clinics. At least four first-class hospitals are needed. The great voluntary hospitals are necessary because they treat acute cases, accidents, fractures and infective cases, but chronic cases may take up a bed for two years or more and their treatment is best carried out in the country. The hospital alone is not enough. There is the early detection of the cripple, mainly through voluntary workers in town and village, attendance at the clinic, diagnosis by a surgeon. That kind of care is much more important than the hospital itself. The object of the orthopædic service should be to prevent the necessity for patients to go into hospital. Professor Mackintosh recalled that Dame Agnes Hunt started the first orthopædic hospital in the world in 1900 in Shropshire. At first it cost £10,000 to £12,000 to run. Today it costs less than £5000 because it is more economical to catch the cripples early, treat them and make them useful citizens, than to make them dependent on public assistance.

MEDICINE AND THE LAW

The "Haldon" Baby

HAD newspapers nowadays been of peace-time proportions, more attention might have been attracted to the curious details of the so-called Haldon peerage case tried at Chester assizes last November. Connected charges against a medical practitioner were recently disposed of, so that reference to the story can now be made without objection.

The prosecution alleged last November that Lizzie Ireland, alias Marcia Lady Haldon, claimed to have been married at Edinburgh in 1938 to the late Lord Haldon who died not long ago in circumstances of

destitution. A "certificate of marriage" was said to have been written on paper bearing the imprint of the House of Lords. There was evidence that Lord Haldon had not been in Scotland at the time. On Feb. 19, 1939, a Mrs. B. gave birth to a boy. Mrs. Ireland visited the mother several times, proposed to adopt the baby and eventually took it away. Mrs. Ireland's cottage happened subsequently to be visited by the village constable. He was invited in and saw "Lady Haldon" in bed; in the middle of the room was a cot containing an infant some days old. "There," said Mrs. Ireland to the constable, "is the future Lord Haldon." According to the prosecution, Mrs. Ireland was over 60 years of age at the time. Isabella Blackett, described as "nurse-secretary" to Mrs. Ireland and indicted jointly with her, went off to a registry office and registered the birth of a son to Lady Haldon. The vicar of the parish called at the cottage and baptised the boy Lawrence Edward Broomfield Haldon.

Mrs. Ireland and Isabella Blackett were found guilty last November of conspiring to make a false statement regarding a birth and of forgery. The former was sentenced to three years' penal servitude, two years on these charges and one year on charges of bigamy to which she pleaded guilty. Isabella Blackett, to whom an exemplary character as a school teacher was attributed, was sentenced to 12 months' imprisonment.

This kind of imposture, of course, is difficult unless aided by a false medical certificate. The medical practitioner already mentioned was before the court a few weeks ago. The prosecution alleged that he had written a letter to the registrar of births stating that Lady Haldon had, in March, 1939, given birth to a male child, who was still living. He pleaded guilty to charges of giving false information and making a false statement that a birth had taken place. The Crown accepted his plea of not-guilty to three charges connected with the conspiracy which the two women had already been sentenced. Mr. Justice Croom Johnson, after hearing evidence of the good service of the accused in the R.A.M.C., bound him over for two years. But for the testimony to his military service, said the judge, a sentence of imprisonment would have been inflicted.

SAVING ON DRUGS

PRESCRIBING is largely a habit, and it takes both time and trouble to overhaul the prescriptions with whose effects we are familiar and replace scarce drugs by plentiful ones. Nevertheless, this task must now be faced if we are to conserve supplies for cases where they are really needed and prevent waste of foreign currency and shipping space. The Medical Research Council is shortly to issue a War Memorandum which is likely to contain recommendations of the Therapeutic Requirements Committee similar to those we have already published in these pages.[1] To assist prescribers we have prepared a list of drugs, official and proprietary, which are readily available.

Acetarsol, acetylsalicylic acid, acriflavine, lanolin, adrenaline, alum, ammonium carbonate and chloride, amphetamine, amyl nitrite, amylocaine hydrochloride, aneurine hydrochloride, aniline dyes (these include brilliant green, crystal violet, fuchsine, malachite green, and scarlet red), antimony compounds, ascorbic acid, barium sulphate, benzedrine, beta naphthol, precipitated bismuth, broom, bromethol, cacao butter, calamine, calciferol, calcium salts, cardamoms, chlorinated lime and solution of sulphurated lime, carbachol, carbamide (urea), charcoal, activated charcoal, chiniofon, chloral hydrate, chloramine, chlorbutol, chlorinated xylenol (parachlorometaxylenol), chlorocresol (parachlorometacresol), chloroform, cinchophen, solution of coal tar, colocynth, colophony, cresol, chalk, copper sulphate, derris, digoxin, dilantin soluble, diodone, ephedrine, ether, ethyl chloride, hydrogen peroxide, iron carbonate, ferric chloride, ferrous sulphate, iron, reduced iron, solution of perchloride of iron, fluorescein soluble, solution of formaldehyde, gold compounds, guaiacol, heparin, hexobarbitone, hexobarbitone soluble, hexamine, hexylresorcinol, hydrochloric and hydrocyanic acid, hydnocarpus oil, indigo carmine, insulin, insulin proteinate with zinc, iodised oil, iodoxyl, kaolin, lanolin, lead salts, leptazol, lysol, magnesium carbonate, oxide and trisilicate, mandelic acid, mepacrine hydrochloride and methanesulphonate, mersalyl, methyl salicylate, methylthionine chloride, mustard, neoarsphenamine, nicotinamide, nicotinic acid, nitrous oxide, nux vomica, oxygen, pamaquin, pancreatin, paraldehyde, phenol, phenolphthalein, phenothiazine, pirevan, pituitary extract, prepared coal tar, procaine hydrochloride, proflavine, quassia, quinidine sulphate, resorcinol, soluble saccharin, salicylic acid, senna, sera and vaccines, silver nitrate, soda lime, sodium aminoarsenate, bromide, carbonate, chloride, nitrite, salicylate, sulphate and thiosulphate, stannic oxide, stibophen, stilbœstrol, strychnine, sulphanilamide, sulphapyridine, sulpharsphenamine, sulphur, suramin, thymol, thyroid, thyroxine-sodium, totaquine, trinitrophenol, tryparsamide, vitaminised oil, zinc carbonate, oxide and sulphate.

1. *Lancet*, 1940, **2**, 340, 432, 472, and 729.

For the present, at any rate, there is no scarcity of the following:

Acacia, aloes, apomorphine hydrochloride, balsam of Peru, barbitone, camphor, cinnamon, cocaine, diamorphine, ergot, ethyl morphine hydrochloride, oils of aniseed, clove, cinnamon, eucalyptus and turpentine, phenazone, phenobarbitone, quinine, rhubarb, tannic acid and silver proteinate.

A defence regulation has been made empowering the Minister of Health and his opposite numbers in Scotland and Northern Ireland to make orders which will empower a chemist to replace a scarce drug in a prescription by a more plentiful alternative named in the order unless the doctor writes the letters N.A. (no alternative) against the scarce drug. An order has already been made under these powers authorising the replacement of potassium bicarbonate, iodide and citrate by equal quantities of the corresponding sodium salts.

Last week we mentioned (p. 288) that amendments had been made to the B.P. authorising the replacement of *Urginea scilla*, which came from Sicily, by *Urginea indica* in official preparations, and facilities are being given for the importation of Indian squill. The Ministry of Health, however, urges the strictest economy in the galenicals containing squill—acetum scillæ, extractum scillæ liquidum, oxymel scillæ, syrupus scillæ and tinctura scillæ. The commonly prescribed mixtures containing these are:—

Mist. digitalis c̄ scilla N.F.	Mist. scillæ co. N.F.
Mist. diuret. N.F.	Mist. senegæ ammon. N.F.
Mist. expect. alk. N.F.	Mist. tuss. rub. N.F.
Mist. expect. nig. N.F.	Linct. morph. rub. N.F.
Mist. ipecac. c̄ scilla N.F.	Linct. scillæ co. B.P.C.
Mist. oxymellis N.F.	Linct. simplex N.F.

The committee now preparing a war-time formulary will be giving us revised formulæ for these old friends, but meanwhile it will be up to the doctor to consider when he orders one whether the patient would suffer if the squill were omitted or replaced.

Any preparations containing alcohol should be prescribed sparingly. The approximate comparative strengths of tinctures and liquid extracts are as follows:

Ext. belladonnæ liq. ℥ 1 equals tinct. bellad. ℥ 25.
Ext. ipecac. liq. ℥ 1 equals tinct. ipecac. ℥ 20.
Ext. hyoscyami liq. ℥ 1 equals tinct. hyoscyami ℥ 10.
Ext. nucis vom. liq. ℥ 1 equals tinct. nucis vom. ℥ 12.
Ext. scillæ liq. ℥ 1 equals tinct. scillæ ℥ 10.
Ext. senegæ liq. ℥ 1 equals tinct. senegæ ℥ 5.

The use of powdered digitalis and prepared ergot instead of the tincture and liquid extract respectively can be recommended on both therapeutic and economic grounds, for both powders represent the most stable compounds of the two drugs. Digitalis pulv. gr. 1 is equivalent to tinct. digitalis ℥ 10 and ergota præp. gr. 1 is equivalent to ext. ergotæ liq. ℥ 2.

A DIRECTORY OF CHARITIES.—The Charity Organisation Society has once more published its annual Charities Register and Digest (Longmans Green and Co. 8*s*. 6*d*.). It is an orderly survey showing where those who need help may best apply for it, and anyone who wants to know what provision exists for any particular case cannot do better than run a "conspectory eye" over the appropriate section in this book. Paper-rationing has not slimmed it, indeed two new sections have been added—one dealing with special war organisations and one with refugees.

Parliament

War Damage Bill

THE House of Commons is proud—and justly proud—of its share in making the War Damage Bill a far better and more equitable measure than it was when originally introduced. Under the stress of war-time conditions it has been impossible to give the bill the full examination which its importance deserves, but it has gone to the House of Lords in a form which, while still far short of perfection, gives solid ground for hope that substantial justice will be done by way of compensation to those whose property and household chattels have been destroyed or damaged by enemy action. So impressed were the Government by the searching criticisms which were levelled at certain parts of the original bill during the committee stage that the Chancellor of the Exchequer took the unusual course of recommitting the measure in order that about 150 amendments, many of which were vital and far-reaching, might be incorporated. For example, as amended the bill now provides that every householder will receive free compensation for personal possessions up to £200. He will also get an additional £100 for loss of his wife's belongings and an additional £25 for those of every child under sixteen. Those who do not come into this category—people who live in hotels, for instance—will receive free compensation up to £50. In addition to this free cover, facilities will be given, on the lines of the personal injuries scheme, to those who desire to effect voluntarily further insurance up to a reasonable figure. Up to £2000 the rate will be 1%; from £2000 to £3000 1½%; and from £3000 to £10,000 (the limit) 2%. The Chancellor of the Exchequer made it clear, however, that the amount of cover would be limited in respect of such things as jewellery, antiques and specially valuable articles. As an example of how his scheme would work, Sir Kingsley Wood said that a husband, wife and two children would receive free protection for furniture and clothing up to £350, and a married man would be able to insure his chattles up to a sum of £600 at 10*s.* per cent., or £3; or up to £900 at 13*s.* 4*d.* per cent., or £6. There was general agreement with the Chancellor of the Exchequer when he claimed that his proposals will be of tremendous importance to a large number of citizens who are in a category which is so often neglected by the state. The free grants will cover the majority of the householders of the country, and of the rest all but a very small proportion will be able to claim full cover for the modest premium of £1 per cent. Among other important changes in the bill as it now stands is the raising from £500 to £800 of the maximum amount of the advances given in cases of necessity to people requiring to have homes and places of business replaced. A person in need both of a new home for his family and new premises for his business can secure advances up to the maximum under each of these heads. On the third reading stage Sir Kingsley Wood gave an assurance that it would be the duty of the War Damage Commission, when it was appointed, to consult with the Ministry of Health in regard to the voluntary hospitals. The minister had undertaken to consult with the various organisations representing the voluntary hospitals, and no doubt with the hospitals themselves.

Road Accidents

In the House of Lords the Bishop of WINCHESTER drew attention to the casualties on the roads and recalled that last year 8597 people were killed, 972 of whom were children under fifteen. In the last four months of last year the figures were even worse—4380 killed, including 496 children. These figures, he said, revealed a horrible and shameful state of affairs. When figures were given for non-fatal accidents they showed that for every person killed on the roads 30 were injured, 8 of them seriously. If those proportions still held good it meant that they ought to add to the 8600 killed 250,000 injured, of whom 70,000 were seriously injured. He asked whether it was true that a large proportion of accidents are caused by military vehicles. He hoped that even under the stress of war it might be possible to prevent, or at any rate reduce, the grave waste of life on the roads.—Lord SNELL, replying for the Government, said that the Secretary of State for War had acknowledged that, taking November and December, 1940, as a time for observation, 300 accidents a day due to military vehicles was an unsatisfactory record, but on this fact alone it was not safe to say that Service drivers were particularly accident-prone, because we did not know the relative amounts of road-usage of civilian and military drivers. A road census taken in London had been inconclusive. Very special instructions had been issued by the War Office about care on the roads. Special measures to reduce blackout risks had met with a certain amount of success. Better lighting, consistent with air-raid precautions, would be considered before the next winter period. The real safeguard, however, lay with the public using the roads. One contribution which we might all make—those who drove and those who got out of the way—would be to regain the sense of the sacredness of human life, even of our own.

QUESTION TIME

Distribution of Medical Man-power

Sir FRANCIS FREMANTLE asked the Minister of Health if he would publish the conclusions of the committee recently appointed to advise as to the distribution of medical man-power between the several civil and fighting services and general medical practice.—Mr. E. BROWN replied: I shall shortly be in a position to publish these conclusions.

Children Unfit for Shelter Life

Miss T. CAZALET asked the Minister if he could state the total number of children who, after medical examination under the new order, had been compulsorily evacuated.—Mr. BROWN replied: The number of children whom it has so far been necessary to evacuate compulsorily is six. It was, of course, expected that where the evacuation of a child was shown to be desirable on medical grounds the parents would normally agree and recourse to a compulsory order would be unnecessary. The total number of children so far evacuated in this way is not yet available but is unlikely to be large since, happily, the health of children in London remains good. I may say, however, that out of 395 children inspected in shelters in Kensington, the examining doctor was prepared to certify 14 for compulsory evacuation; all 14 are being sent away voluntarily.

Exemptions from Billeting

Dr. E. SUMMERSKILL asked the Minister whether he would make arrangements for individuals in reception areas who pleaded ill health as a reason for not receiving evacuees to have a medical examination by an independent doctor without local association.—Mr. BROWN replied: I think we must continue to rely on the scrupulousness of the medical profession in providing medical certificates and on the good sense of chief billeting officers and billeting tribunals in attaching due weight to pleas of ill health. The Defence (Billeting Tribunals) Rules, 1939, enable the tribunals to hear such evidence and make such investigations as they may think fit.

War-time Eating Centres

Mr. NESS EDWARDS asked the Minister if he would state the relation between communal centres for feeding evacuees and the communal feeding-centres proposed by the Ministry of Food; and, in particular, whether centres established under the Ministry of Health could be opened to categories of persons proposed to be provided for by the Ministry of Food.—Mr. BROWN replied: It has been arranged that responsibility for feeding centres for evacuated persons shall be transferred to the Ministry of Food as from March 1, 1941. Following this transfer the centres will be open to all members of the public.

Mr. R. W. SORENSEN asked whether the Minister was aware that most of the foodstuffs sold in shelter canteens were predominantly of a starchy nature and deficient in other necessary dietetic qualities; and whether he would take steps to remedy this and cause to be made available in the shelters other foodstuffs necessary to a balanced diet and good health.—Major LLOYD GEORGE who replied said: The standard of catering in shelters is less satisfactory than I should like it to be partly owing to reductions in the supplies of meat, cheese and fruit available for shelter caterers, and partly to fluctuating numbers in the shelters making it necessary for caterers to restrict the amount of perishable foodstuffs for sale in order to avoid waste. It must, however, be remembered that regular shelterers bring from home the more nutritious part of their meal. There will shortly be issued to all shelter caterers a pamphlet with recipes for nutritious snacks made from readily procurable commodities. Supplies of the concentrated soup specially prepared for emergency use will also be made available in the near future.

Milk in Northumberland

Mr. DAVID ADAMS asked the Minister whether he was aware that the medical officer of health for Northumberland stated that the position regarding milk generally throughout the county was unsatisfactory; that of 112 registered cow-keepers in the Castle Ward rural district, a few only had cowsheds which complied with the Ministry's standard, and that this was representative of the county generally; and what steps he proposed to protect the public against the risks of milk produced under such conditions.—Miss F. HORSBRUGH replied: The enforcement of the provisions of the Milk and Dairies Order relating to methods of production is in the hands of the appropriate local authorities. The Minister will cause inquiries to be made into the case to see if there is any action which he can usefully take.

In England Now

A Running Commentary by Peripatetic Correspondents

IN this war medical specialists seem to be a drug on the market, and with many of my colleagues I once feared that I should never take any active part in hostilities. Merely standing by as physician to an emergency team to deal with air-raid casualties in the city does not give much satisfaction, for air-raids are rare in this part of the country. But I have found salvation in the Home Guard. Not the least attractive feature of membership as a private soldier is the almost complete absence of responsibility. When I don my uniform professional cares slip off my shoulders, and the prospect of leaving the initiative to others for a few hours is extremely agreeable. Clad in battle-dress, nobody will ask me to undertake the management of an intractable case of colitis, or explain to anxious relatives the significance of agranulocytosis, or give a lecture to postgraduates on "something of current interest." No, I take delight in the fact that I am just one of the men in Section 5 of the village Company. On route marches it is sometimes difficult to find topics of conversation. Last week I had a butler on one side of me and a swarthy farm labourer on the other. Commonplaces were soon exhausted, and I settled down to enjoy the grandeur of a highland landscape on a clear winter's day, and to relish to the full what Dr. Brodsky used to call "the eloquence of silence." But the silence is not complete—there is the steady tramp of soldiers marching, and the fascinating sound is as soothing as a nocturne. "Strangely to the brain asleep, music comes. . . ." In such a state of mind one would be mere clay in the hands of a psychiatrist; every lurking fear and every buried inhibition float to the surface, well within reach of the practised psycho-analyst. Happily my marching companions were not competent to take advantage of this trance-like state.

Field exercises are the most exciting part of our training. A few weeks ago we played the part of parachutists attacking a neighbouring village. This was a return visit for an "attack" which we had sustained a fortnight earlier. I was one of a mixed group drawn from several sections of the company. Having "landed" (we were deposited in the environs of the village by motor-bus), we approached our objective by one of the main roads. Crouching behind the hedge in the driving rain, we got within firing distance of the "enemy" whom we could see manning a road-block. Our leader, however, was anxious to get more information about the defenders' dispositions, and looking round at his rain-sodden squad he called to me in a hoarse whisper, "Hi, you! cross over to the other side and try to find out how many of them there are. And mind them bloody snipers!" As I got ready to depart I realised that had this been the real thing I should have been taking my last journey; the "enemy" had the whole road in his field of fire, and on the opposite side was a tall brick wall without a vestige of cover. "Yours not to reason why," I thought to myself as I crawled on to the macadam; and a second or two later, looking cautiously up the road, I saw that one of the defenders had already accounted for me. He was near enough for me to make out his devilish grin as he levelled his automatic rifle at my head, and then he waved a red flag which meant that I must consider myself dead. I made my way to the village hall about half a mile distant, and on being challenged by the sentry I had to introduce myself as a corpse seeking shelter. All my companions were subsequently bagged by the same sniper, and joined me looking none the worse for their execution but if possible even wetter than I was. When the attackers and defenders assembled about half an hour later I took the opportunity to congratulate the sniper on his excellent shooting and on the effective cover which he had secured. At the same time I explained to him that his was a hollow victory; for it was the job of our section to draw the enemy's fire while our other two sections tried to outflank the road defences on our right and on our left. My fellow corpses and I found consolation in the news that four of our men did actually get through. These heroes had been able to take over the telephone exchange and the railway station, and had then proceeded to "blow up" the gasworks and make themselves a nuisance generally before presenting themselves at their hosts' headquarters in high glee.

These exercises are carried out with great enthusiasm; and although they are primarily intended as training in defence the majority of the men would admit that they rather fancy their chances as members of an attacking force. Some day—perhaps not far distant—they may get their opportunity in the land where everything worth while is verboten. In that day I hope they will remember something of the lessons in first-aid which I have given them.

* * *

I was reading the other day the chapter on pneumothorax in Hilton Fagge's "Principles and Practice of Medicine" (1886), and was charmed to notice his reference to a Dr. Hughes, who in 1844 pointed out that at times the supervention of a pneumothorax may give rise to no symptoms whatever. Dr. Hughes, he says, was "one of the best auscultators of that day." The reputation of being a fine auscultator is intriguing. Laennec's "Traité de l'auscultation médiate" appeared in 1819, and Josef Skoda's "Abhandlung über Perkussion und Auskultation" came from Vienna in 1839. Had Hughes been to Paris and attended Laennec's clinics at the Hôpital Necker, or had he only read the book with all its remarkable exploration into the physical signs of chest diseases? For physicians the eighteen-thirties and thereabouts must have been eager and exciting days; and one can also hear their pupils buzzing like bees around the pulmonary cases, arguing passionately over what they thought they were actually hearing, arguing as dogmatically about the significance of the physical signs which they had elicited. Skoda himself seems to have been so excited by the new methods that correct diagnosis became almost a proud obsession, to the exclusion of all other loyalties. Like the reader of detective stories pitting his wits against the wily author, he was content to see his bedside findings and the deductions which he made from them confirmed at post-mortem; indeed, I suspect that he must have felt cheated sometimes when the recovery of a patient left a particularly tricky problem unsolved.

I cannot believe that my own students regard me with the reverent astonishment with which I worshipped—for a time, at least—my own chief, who was one of the old school. I used to think him a wizard, endowed with quasi-magical powers; able to reveal with negligent ease significant differences in Krönig's bands, to percuss out to a millimetre Grocco's triangle, to detect Wintrich's change of tone, to spot a *bruit de drapeau*—matters totally beyond our achievement, try as we would. "Bliss was it in that dawn ——!" Quite often the post-mortem proved him wrong, though it did not seem so often at the time; and in those days there were none of the clear modern X-ray films to throw doubt on the magistral clinical diagnosis long before the patient arrived at the post-mortem table. Nowadays physical signs are rather blown upon; some of our young men have, I fear, fallen into the immorality of continuing to teach signs which ought long ago to have been deposited into a museum of medical antiquities, while at heart and in their essential practice they largely rely for diagnosis on a good X-ray film. St. Paul is not much read nowadays, I suppose; certainly many of them do not "prove all things and hold fast to that which is good" by using the X-ray film to educate them in the value of some and the

uselessness of other physical signs. Sooner or later we shall no doubt shake down to a properly balanced use of both diagnostic methods; but at the moment we are in a phase where many physicians and some radiologists are (unconsciously perhaps) accepting an X-ray film as though it were a true likeness of the underlying tissues. It is as though a man should be content to live in a world of photographs rather than of real persons—in this case, photographs of shadows. They tend to forget that pathology is the foundation of medicine; they look at the shadows, and pin labels on them, without proving their actual pathological basis. It is so easy to see through a glass darkly, far easier than to take off the chest wall by disciplined and trained imagination and see the underlying organs as they really are, macroscopically and microscopically. The physicians of the pre-radiological era who were their own necroscopists were familiar with the vagaries of pneumonia, lobar and lobular, pneumococcal, streptococcal, influenzal, "septic"; they knew their pathology too well to invent, for example, a new and modern disease called "pneumonitis." Nor would they have been at all surprised to find that certain types of bronchopneumonia could produce shadows on an X-ray film very similar to those of miliary tuberculous deposits. In the past there have been many crusades with the slogan of the about-turn: "back to the Bible," "back to the land" and so on. "Back to pathology" would be good for physicians and radiologists alike.

* * *

You may like to hear more fully my adventures in the beautiful grey saloon with a red stripe around it, driven by the charming American ambulance driver. Having provided myself with a good novel for the journey I made towards the back seat, but the chauffeuse opened the front door. "Do I sit at the back?" "Where you like, Sir." The invitation was too obvious to be disregarded. The chauffeuse turns out to be rather chatty and I get a most convincing picture of the generosity and forethought of our friends across the Atlantic. It appears that there are some 600 ambulances in the country, scattered in small units. Many are saloon cars—Packards, Buicks, Chryslers, Chevrolets and Fords; these are mostly used for the transfer of sitting patients from one hospital to another, and for the transport of medical and surgical personnel from place to place. The label "Surgical Unit" gives an added importance, and is sometimes of use in getting through traffic difficulties. There are larger vehicles, fitted out to take four stretcher cases, and still larger trucks fitted out for a special purpose. The American dental surgeons have presented such a truck, fitted out as an excellent dental workshop, even to a folding dental chair. It is now attached to one of the maxillo-facial units, and can be taken to any patient with a fractured jaw who is too ill to move. All apparatus for dealing with the fracture can be manufactured on the spot, including, if necessary, cast metal cap splints.

The ambulances have all been presented by different people, or groups of people, in the United States, and carry small brass plates suitably inscribed. They work under the direction of the E.M.S., and in these days, when transfer of patients from one hospital to another is the rule of the day, they are not often idle. The women drivers are volunteers, but are given a small billeting allowance; those drafted to one station usually take a small house and do their own catering. They have sometimes to find new billets in the middle of the night, their own having become uninhabitable and stations having also been damaged, when new accommodation has been found in record time. The drivers are on duty at all hours, with only one or two relief drivers at each station. They have had some amusing and amazing experiences, but throughout remain cheerful and fearless. My driver was once stranded a hundred miles from home, late at night, when the last train had left. Rather than wait till next morning she begged a lift from a lorry driver, and was full of anecdotes of the long journey back, of the icy roads, and the hours spent coaxing the heavy lorry up slippery gradients. She enjoyed the trip immensely, and was full of admiration for the lorry drivers with their unquenchable humour. She deserves an equal measure of admiration.

Those of us who are in a position to ask for the services of these ambulances should make it our duty to see that the messages are sent off sufficiently early in the day to make it possible for these girls to complete their journeys in daylight, and do all we can to reduce loss of time at the sending and receiving hospital. There is nothing more unpleasant than to have to drive home in the dark, with fast moving Army lorries coming the other way, into an area which is being raided, and it should be possible to save these girls this additional burden. We stopped for a meal and I wondered what was the correct official procedure. Should I give the driver "something for lunch," should I send her to the chauffeurs' entrance, or should I invite her to lunch with me? There may be something in King's Regulations about "drivers, female" but in the absence of information on the subject we shared a good lunch, with meat *and* Stilton, before finishing the journey. This was the least I could do to express my gratitude.

* * *

Every teacher of preclinical medical students has at times longed to excuse the mass of facts of physiology or anatomy or whatnot that it is his duty to place before them by dilating on the value of these facts in healing the sick. From long experience I have learned that it is possible to lay too much stress on this point. I do not mean that the student finds that the information he acquired in his preclinical years is redundant or useless, though even this may at times appear to be true. There is the student who returns to his anatomy teacher somewhat disappointed that, whereas he had been told that a knowledge of the topographical anatomy of the muscles is essential to good surgery, he has received a friendly pat on the buttock from the distinguished surgeon with the greeting "Well, boy, you are straight from the dissecting-room so you know all about the gastrocnemius, what?" I mean rather that which so often happens to the best of all students, the man who started on his career with a mission—the man who wanted to be a doctor, to heal and to do good. It is easy to dilate to this man on the power that is being put into his hands by a study of the preclinical subjects. It is easy to fill him with appreciation of the wonderful methods of modern medicine and surgery. It is easy to convince him of the mastery over disease that the innumerable discoveries of modern science place at his disposal. This is the man, and in my own experience he is one of a long series of men, who returns to his former teachers depressed if not heart-broken. It is the best men who feel the shock most acutely. For a short while the whole atmosphere of the wards is a novelty. The fact that living human beings are the subjects of study spells reality. But for some there comes the dawn of a realisation that dramatic cures are not of daily occurrence in the wards; that the conquest of disease—that talisman for which they have worked so hard—seems in reality to be no more than a limited possibility of patching up for a time those whom disease has already conquered. It is here that disillusionment and disappointment come to the best students. To their preclinical teacher, when they tell of these things, there is apt to come a feeling almost of shame; that maybe he set their hopes too high. Would it not have been better if he had told them of the possibilities of the conquest of disease that modern science has placed at our disposal, but to have qualified this by saying that these possibilities were frustrated by the inherent defects of our social structure? Such men should probably be warned that though they are potential healers their function is in fact no more than that of patchers, making temporary repairs of wreckages caused by and made recurrent by a social system that is beyond their control. It is hardly the province of the teacher in our medical schools to discuss social conditions, it is his function to impart the facts of anatomy and physiology and other essential subjects. All he can say in comfort to the disappointed student is "Patch them up, make them fit for the battle again, even if only for a little while. Patch them up. They will come back, broken again. Patch them up till no more patching can be done. Then learn what you can from the post-mortem." For sooner or later that is what we must accept the high mission of our hospital staffs to be. Alternatively he might say "If you do not like this patchwork business, which is inevitable under our present social system, why

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Letters to the Editor

MEDICAL PLANNING

SIR,—As some reorganisation of the medical service is inevitable would it not be best to begin with a survey of the medical needs of the community and of the means available to meet those needs? Each one of us knows his own branch of the work and the duties and remuneration attaching to it; who among us sees his own work, who sees his neighbour's work, in due proportion relative to the present and future needs of the community? If we were all better informed we could meet the reports of reorganisation committees with less apprehension that present inadequacies would be perpetuated.

One case in point: the B.M.A. Medical Planning Commission has on it only one member (who is to be sure almost a committee in himself) to represent the whole of psychological medicine—with responsibility for the insane, defectives, psychiatric clinics, child-guidance and an ever-increasing liaison with education, industry, social hygiene and crime. Besides calling for a statement of present medical activities and educational facilities I think we should require that the report should indicate *the rate of growth* of the different branches of the medical service. We need to know not only what we are doing now but how rapidly we are changing and the direction of change under the influence of scientific discovery.

A survey of this kind, which need not take long to draw up, would probably reduce the time spent in discussing the details of the reorganisation, because the disputing parties (and already there are signs that such exist) would have to face an informed public opinion.

Sheffield. JOHN RICKMAN.

BREECH PRESENTATION

SIR,—I read with much interest of the constructive work which has been done by Mr. Gairdner of Exeter, and Dr. Margaret Hadley Jackson and Dr. L. N. Jackson, in reviewing 100 cases. In peace or in war it is of great importance that a first child should be born alive, more so in war when there may be but one child of a marriage. A primigravida with a breech presentation presents a different problem from a multigravida, and more latitude may reasonably be allowed to the latter, as the authors point out. In the primigravida I agree that external version should usually be attempted, if necessary under anæsthesia with full relaxation. If the legs are extended, the attempt may be unsuccessful particularly in a patient with a thick abdominal wall. If the patient is young, has strong abdominal muscles and has a good figure for child-bearing, she will probably, if allowed to continue with a breech, deliver herself naturally of a living child. I have learned to be especially careful with a woman with short thick thighs or small hands with stumpy fingers. She may have a small pelvis, more often a small vagina with a small orifice, and is likely to have difficulty with a breech. When the head has difficulty with the soft parts at the end of labour the advantages of an episiotomy should not be forgotten. The operation can be done under local anæsthesia or nitrous oxide which leave the womb to exert its maximum power to effect delivery; general anæsthesia with chloroform or ether diminishes the power of the womb and a stillbirth often results because of misapplied manual assistance.

If a patient is an elderly primigravida, or if she has been married for some years and has had special difficulty in becoming pregnant, if she has previously had a dead baby or if she has had previous miscarriages, a cæsarean operation probably offers the best chance of securing a living child. The vitality of a baby in the womb can never be assessed. Many a strong child will be born alive in circumstances under which a weaker one might perish. If cæsarean operation is undertaken it should be done before labour begins, otherwise a baby may die in the womb during the early stages of labour before it can be delivered. This accident, though rare, is one of the disadvantages of a trial labour apart from the harassing effect which such a trial may have upon a sensitive woman. A lower segment operation has many advantages over a classical operation. It can be done with greater safety than a classical operation, particularly if the patient is seen for the first time late in labour, and probably a natural labour can be allowed more safely after it. Some mothers think that a cæsarean operation precludes them from a subsequent natural delivery or that it cannot be repeated. They should be told that a natural labour may still be experienced and that other cæsarean operations can be carried out if required. Moreover, the genital canal receives no damage by cæsarean section. There is no danger of cystocele, stress incontinence, rectocele, torn perineum or fistula. The woman should return to her husband in health and fully able to carry on her maternal and domestic duties. In arriving at a decision, too much attention should not be given to the skeleton at the expense of flesh and blood. Even the best executed plastic operation cannot fully restore the pelvic floor and genitals in a woman who has received severe damage during a difficult breech delivery.

Plymouth. JAMES RIDDELL.

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not try to change the structure of society?" But such things are naturally not considered appropriate in the curriculum of a medical school. Nevertheless, if the practice of medicine is to keep pace with the advance of scientific knowledge we will have to admit that, among the "Things to Come," this thing is of the first importance.

TREATMENT OF HYPERTOXIC DIPHTHERIA

SIR,—In Dr. McSweeney's interesting paper of Feb. 15 (p. 209) the statement is made that the serum used in the first group of 16 cases was discovered to contain a large quantity of "anti-B substance." This statement may lead to the assumption that Dr. O'Meara's substance B behaves as a normal antigen and can be titrated against a specific anti-B antitoxin. The position is really more complicated. The antitoxin used with success by Dr. McSweeney differed from usual commercial antitoxin in three known respects:

1. This antitoxin was capable of combining more firmly with toxin—i.e., it was avid, as determined by the dilution ratio test of Glenny and Barr (1932).

2. It contained an excess of the "non-flocculating antitoxin" of Barr and Glenny (1931), as measured by the serum ratio.

3. The serum ratio of the parent serum was increased by a special method of salting out, which was shown by Barr and Glenny (1931) to enhance the proportion of non-flocculating antitoxin.

The statement that this antitoxin contained a large quantity of anti-B substance is an indirect inference made by Dr. O'Meara and based on his theories as to the connexion between avidity and "substance B." If I have understood Dr. O'Meara's paper in the same issue he considers that excess of unneutralised substance B causes dissociation of the combination of substance A and its antitoxin, basing this deduction presumably on the experiments detailed in table 4 of his paper in the *Journal of Pathology and Bacteriology* (1940, **56**, 317). This serum occurred spontaneously in the course of immunisation of a horse with Park Williams 8 toxoid and toxin. Glenny has found such very high ratio sera to occur in about 1 in 1000 horses immunised, although small quantities of antitoxin with these characteristics can be obtained from a number of average sera by fractionation with ammonium sulphate.

It is unfortunate that the unsuccessful serum used by Dr. McSweeney and described by him as "control" serum was intermediate in these properties between the "good" serum and ordinary commercial antitoxin. The following table gives the actual figures determined by Glenny and Barr.

	Dilution ratio	Serum ratio
Avid antitoxin (good)	1·19	2·27
Control antitoxin (poor)	1·06	1·86
Average commercial antitoxin ..	0·95	1·00

The statement that the control antitoxin was little if at all different from ordinary commercial antitoxin was not made by anyone in these laboratories. It is clearly incorrect. So far attempts made in these laboratories to produce sera of high dilution ratio by the injection of extracts of diphtheria bacilli and other methods

have failed, but the clinical results obtained by Dr. McSweeney are sufficiently suggestive to encourage further work. It is pertinent, however, to note that the serum referred to as control serum, and which appears to have given a worse therapeutic effect than ordinary commercial antitoxin, was a later bleeding from the same horse as that from which the avid serum came, and, though somewhat weaker in dilution ratio and serum ratio, was much better in both respects than ordinary commercial antitoxin. Even the evidence interpreted by Dr. O'Meara to mean that a serum contains anti-B substance is not perfect.

In Dr. O'Meara's paper in THE LANCET the statement is made that manufacturers introduced methods of concentration without adequate clinical trial. I think he is misjudging the sense of responsibility of manufacturers of antitoxic sera. Before introducing the enzyme-treated serum in 1938 these laboratories had received reports of clinical trials on 570 cases showing that unit for unit it was not distinguishable from sera already in use. He also infers that the Römer method was substituted for the Ehrlich method of titration in a casual and haphazard manner. At these laboratories parallel tests of at least 1000 sera were made before it was decided with the consent of the authorities administering the Therapeutic Substances Act to use the Römer method as routine.

J. W. TREVAN,
Director, Wellcome Physiological Research Laboratories.
Beckenham, Kent.

SIR,—Dr. Donovan's suggestion of treating cases of hypertoxic diphtheria with commercial antitoxin plus a transfusion from the pooled blood of local adult donors is a very interesting one and we hope to put it to the practical test in a few cases at an early date. It is quite likely that adult blood may contain quantities of "anti-B" factor; this would explain why adults so rarely die of diphtheria even when they develop grade-4 infections. Theoretically it should be better to give a transfusion of pooled blood, but the practical difficulties of providing five or six suitable donors simultaneously and at short notice are considerable.

CHRIS. J. MCSWEENEY.
Cork Street Fever Hospital, Dublin.

INFANCY OF THE BLOOD-CELL

SIR,—In a leading article on Feb. 22 you dealt with a recent publication of mine on the development of the blood. I feel certain that the megaloblasts which appear in pernicious anæmia are not the primitive megaloblasts which are alone present in embryos up to 10 mm. but are those of the definitive series of blood-cells which appear at 10 mm. and persist after the complete disappearance of the primitive. The latter are to be regarded as relics of pre-mammalian days, comparable with the formation of gill clefts, and are phylogenetically distinct from the definitive. They disappear by the end of embryonic life, that is, by the end of the third month, and have not been known to persist or reappear. They have therefore no pathological significance. Without a doubt the erythroblasts and erythrocytes in fœtal and post-fœtal life, in health and disease, belong to the definitive series.

The classification of erythroblasts I used depended upon whether they form normocytes or megalocytes. The precursors of normocytes are normoblasts and those of megalocytes megaloblasts; those which are capable of forming both normoblasts and megaloblasts are primary erythroblasts. Some confusion might arise from the fact that the erythroblasts of the primitive series are megaloblasts, as also are many of those of the definitive series. I might have employed an alternative term for the primitive cells, such as macroblast and macrocyte, but since the primitive cells do not enter the realm of pathology there should be no confusion between the two series of cells. The normoblastic and megaloblastic forms of definitive erythroblasts are not distinct from one another but are dependent entirely upon eosinophilia of the cytoplasm occurring at different stages of development in the same series of cells. This eosinophilia tends to retard shrinkage of the cytoplasm during further development of the cell so that if primary erythroblasts become eosinophilic they tend to produce megalocytes (megaloblastic erythropoiesis) whereas normally in post-fœtal life eosinophilia does not appear till the primary erythroblast has passed into the basophil normoblast stage and a normocyte is produced (normoblastic erythropoiesis). Shrinkage of the cytoplasm of eosinophilic cells with distinct nuclear structure (megaloblasts) may, however, sometimes occur so that they later become normoblasts, not pyknotic megaloblasts, and finally normocytes. I had to call this formation of normoblasts from megaloblasts megalo-normoblastic erythropoiesis as it was the only manner of formation of normoblasts at one stage of intra-uterine life.

Textbook descriptions of erythropoiesis lead to misunderstanding in an attempt to reduce the development of the cells to a single-line series. This cannot be done to cover all periods of life because of the different stages at which eosinophilia or maturation of the cytoplasm occurs at different periods. Maximow and Bloom give a single-line series of cells which shows megalo-normoblastic erythropoiesis normal for man, apparently at all ages. Eosinophilia appears to begin in cells with distinct nuclear structure yet the pyknotic stage is called a normoblast and not a pyknotic megaloblast. Such misconceptions probably depend upon the study of material other than human, or human material at one period of life alone, and possibly also from the study of marrow in decalcified bone. I have found that the acid treatment in the latter may render the hæmoglobin known to be present in the basophil primary erythroblasts stainable by eosin, so that the cells appear like megaloblasts even when the staining of other soft tissues has not been obviously affected. Other misconceptions, such as the use of the term megaloblasts for primary erythroblasts and the belief that erythropoiesis in the marrow in man is intravascular, are too erroneous to merit criticism.

St. Andrew's Hospital, Billericay. J. R. GILMOUR.

THINGS TO COME

SIR,—The Medical Practitioners Union must be commended for producing a concrete and well-thought-out scheme of whole-time medical service, the reception of which is described objectively and lucidly by Dr. Gordon Ward in your issue of Feb. 22. About three-quarters of the replies favour the proposal, but as only 1364 out of 60,000 registered practitioners in Great Britain and Ireland returned the questionnaire the desire for change is probably less general than we had been led to suppose, unless the standard of remuneration failed to attract. Yet if the plan were accompanied by an actuarial computation of its annual cost in salaries alone—omitting plant, equipment, supplies, and central and regional premises and staff on the grandiose civil-service scale—no Chancellor of the Exchequer in the lean postwar years could countenance so expensive an enterprise. Moreover, having adopted the doctors the state would immediately be faced by similar and formidable demands, backed by irrefutable logic, by dental surgeons, lawyers, quantity surveyors and representatives of many other business and professional avocations; until at length, after successive crises and general impoverishment, we would be reduced to the level of serfs, as members of a Total State.

It is sometimes argued, and not unreasonably, that if we can afford to wage war and to pay for it at an outrageous rate, then surely we can supply such peace-time perquisites as free-gratis this and that, including all-in medical and dental care. The answer is (*a*) that we most certainly cannot afford war, and (*b*) that we are not paying for it. We have, however, no choice just now but to make war, and we will have to pay for it some day; and there is not the least doubt that for a generation or more after peace is declared this country (and most others) will be desperately hard up and in pursuit of solvency will be forced to accept not a higher but a lower standard of life. There are, of course, some possible alternatives, for we might get rid of our heavy financial obligations to friendly countries by repudiating our foreign debts, the Communistic expedient; or by uncontrolled inflation with debasement of the currency, the method of another fraudulent debtor, which would swindle our foreign creditors as effectually as repudiation and ruin our own people as well. Being British, and quietly proud of our name and traditions, we are unlikely to adopt either of these courses.

While the profession's footings probably remain sound, some repairs are needed to the roof and walls; and reformers might ponder on the following proposals, which indicate the trend of thought of many who are interested in evolutionary as opposed to revolutionary progression.

1. A reduction in the number of entrants to medical schools.
2. Acceptance only of entrants likely to succeed in professional life.
3. A single professional qualification in place of many.
4. The granting of licences to practise solely to British Commonwealth nationals, and the repeal of reciprocity arrangements with foreign countries.
5. Reorganisation (and revitalisation) of the British Medical Association.
6. A stronger front towards bureaucratic "chisellers."
7. The selection of hospital visiting staffs on merit; dismissal for misdemeanours or lowered efficiency; abolition of the seniority system.
8. The designation "specialist" to be permitted only where an adequate course of appropriate resident hospital training has been completed, preceded by some general experience.
9. The designation "consultant" to be permitted only after ten (and preferably twenty) years' experience in active practice.
10. The rigorous prosecution of abortionists, fee-sharers, and other pests.
11. The repeal of legislation permitting the sale of contraceptive materials and appliances, and the closing of birth-control "centres" or "clinics."

These suggested reforms are all practicable; some are overdue, others debateable, and a few would require legislative sanction.

Great Russell Street, W.C.1. H. D. L. SPENCE.

TREATMENT OF WAR NEUROSIS

SIR,—Dr. Slater and his colleagues omitted to make it clear in their article (*Lancet*, Jan. 25) that they were dealing mainly with chronic types of war neurosis. There was nothing definite in the text and certainly not in the title of the article to indicate this. Naturally one expects results in chronic cases to be very considerably less hopeful than in other forms and the 15% made fit to return to duty constitute, I imagine, quite a good proportion. When Dr. Slater goes on to state that it would be easy to bring this 15% up to 100% if they were concerned simply in obtaining superficially brilliant results, I who know something about the soldier and remember many tough cases in the last war can only stand in awe of the potentialities he and his colleagues evidently have in reserve.

What I have learned about the present war so far has not convinced me that "experience (psychiatric) gained in the last war is not easily related to the present war." Some, undoubtedly, of the circumstances are different. But clearly the precipitating factors in both instances are the same—experiences that disturb the fear mechanism of the mind. The background of neurotic and predisposing features cannot be very different, the main distinction being that we know more about them now than we did in 1917. The criteria given in assessing personality, on which stress was laid in the article, can hardly be said to be very illuminating. The two cases presented in illustration were both men with a history of pronounced neurotic symptoms, extending back several years, who would in all probability have been rejected by an ordinary medical board if the facts had been before them. It is encouraging to learn, however, that follow-up statistics—which were not collected in the last war—are now being prepared and I shall look forward with much interest to these and to the further analysis of Dr. Slater's case material.

I welcome a reply from Dr. Maurice Wright and was interested in the test he put forward for estimating breakdown of personality stability under war conditions. But as the type of case he describes—men who have never climbed a tree, never played football and never fought a fight—are admittedly few in number they do not affect the problem to any extent. I am sure much first-class psychotherapy is being carried out in the treatment of the war neuroses. But the authors of the article in question laid themselves open to criticism because they did not seem to be making use of it to anything like the extent it appeared to warrant; they seemed, in fact, to be sceptical of its value in general and believed in discharge from the Army as the best procedure in a surprisingly large number of cases. Dr. Burns in his letter of March 1 provides evidence to show that discharge is not a panacea and does not by any means solve the problem.

Harley Street, W.1. FREDERICK DILLON.

FOOD DEFICIENCIES

SIR,—In many quarters it is being stated with a certain amount of self-satisfaction that the curve of infectious diseases did not rise during January. As an addendum to these claims it is stated that January is the peak period for epidemics of this sort. This is not true; the curve of fatality from epidemics begins to rise at the close of the year and reaches its maximum at the end of February and March. It is well understood that the protective elements in our food, which are plentiful during the summer and autumn, begin to disappear from our diet when our gardens become bare. In olden days the result of this was a high fatality from such diseases as scurvy and pre-scurvy and the old wives used to put into a jingle the great truth:

"'Tis time to turn to saladies
To cure the winter maladies."

They hunted the hedgerows for dandelion leaves, early spring nettletops, and the gardens and streams for camomile and watercress. During the last century our shortage of English green protective foods has been replaced by imports and by salads grown under glass. The absence of these imported fresh vegetables and salads and their shortage in our gardens is now beginning to affect the poor children of our towns.

Medical welfare workers are faced with an increase in rachitic symptoms and actual rickets among our younger children. A new ailment—"shelter rash"—is also appearing. Whatever the cause, these skin eruptions suggest interference with the nutrition and constitutional health of the younger children. Older and more selfish people look after themselves; it is for doctors to insist that the essentials of health should be provided for children. One thing which is at present saving them is milk, but even milk today is largely obtained from stall-fed, as opposed to pasture-fed, cows. One pint of milk from a pasture-fed cow may be equal in protective value to two pints from a stall-fed cow. Green vegetables must be available for every town child.

Harley Street, W.1. JOSIAH OLDFIELD.

MARY STUART VINDICATED

SIR,—I pointed out in "Mary Stuart, Forgotten Forgeries" in 1934–35 that Mary Stuart suffered throughout her life from gastric ulcer and nearly died of hæmatemesis from this cause at Jedburgh, at a time when Buchanan in his "Detection" alleges that she was committing adultery with Bothwell. I was the first writer to establish this. The Jedburgh illness is of historical importance as bearing on the chastity of poor maligned Mary.

Hove. GEORGE TURNER.

ADSORBENTS

SIR,—Your leading article of Feb. 15 dealing with the use of adsorbents in the alimentary canal draws timely attention to some of the many interesting problems inseparable from this subject. It would be a grave error to regard substances adsorbed from the gastric contents as being thus rendered inaccessible to the later processes of digestion and absorption. As an insoluble adsorbate finds its way along the gut it passes through chemical environments which vary continuously. Interchanges occur freely and material originally bound may be liberated again as reaction swings from one side of the neutral point to the other or as surface tension is modified by the presence of bile salts, soaps, &c., or as products of enzyme and bacterial origin are encountered for which the adsorbent possesses a selective preference. The chemical nature of the final adsorbate is not determined until the full length of the tract has been traversed. It is already known that ferments adsorbed on to such materials as kaolin are still able to carry on their specific functions when suspended in an appropriate medium and that adsorbed food materials can still be broken down by

enzymes introduced into the surrounding fluid. The introduction of a potent adsorbent into the alimentary canal undoubtedly modifies the chemical sequences profoundly and with them the saprophytic flora too, this flora being the biological expression of the chemical and physical condition obtaining in the bowel. Whether this modification is to the advantage of the patient or not can only be ascertained by clinical observation. Each morbid condition for which adsorbents are prescribed presents its individual problems which cannot be solved entirely by experiments in test-tubes and reflection in the study chair. Answers have already been found to some of the questions raised. For example, the adsorption of vitamin B_1 on fuller's earth does not prevent the vitamin from reaching the tissues when the adsorbate is administered by mouth. An adsorbate of this nature is an official pharmacopœial preparation. Furthermore, it has been shown that liberal doses of liquid paraffin given night and morning do not make any measurable difference to the amount of fat-soluble vitamin A or of its precursor, carotene, absorbed from the routine meals of the day.

Cavendish Square, W.1. N. MUTCH.

TRICHINIASIS

SIR,—Dr. Sheldon, in his account of the epidemic of trichiniasis in Wolverhampton, suggests that the relative freedom from the parasite previously enjoyed by this country was attained by a high standard of meat inspection. I do not doubt that he is right in thinking highly of our meat inspections, but surely no attempt has been made in this country to employ the special examination required for the detection of trichinised pork. According to reports this special examination has been abandoned in the United States, where the condition is a recognised problem, though it may still be practised in certain parts of Germany. It seems that in searching for the cause of the recent outbreaks attention should be directed to any war-time change in pig food, or to any new source of sausage meat developed to replace pre-war importations now unavailable. An order requiring garbage used for pig food to be boiled has been in force for many years, and though this measure was directed primarily against foot-and-mouth disease it possibly plays a part in making trichiniasis a rarity in home-produced pork.

My interest in this disease was aroused 8 years ago when I saw two girls in this city whose condition left little doubt that they had become trichinised; they had partaken of a form of undercooked porkmeat served in hors d'œuvres. Chance recollection of a valuable note by Dr. R. A. Hickling (*Brit. med. J.* 1931, **2**, 654) on a case of the puffy eye syndrome seen in his ophthalmic clinic provided the key to the diagnosis.

Newcastle-upon-Tyne. IAN E. MCCRACKEN.

GARGOYLISM BY ANY OTHER NAME

SIR,—In your leading article of Feb. 22 you take exception to the name gargoylism on architectural and humanitarian grounds, and advocate "Hurler's lipoidosis" as an alternative. While aware that it is sublimely unimportant whether the name gargoylism is retained or not, I would like to protest against a pontifical blessing being given to the alternative. You start with the statement that the condition was first described by Gertrud Hurler[1] in 1919. This is a mistake which has been made by all continental writers on the subject, and some English ones (including, I regret to say, myself). Cockayne[2] however, pointed out that a good clinical description of the condition had been given by Hunter[3] two years before Hurler's paper appeared, and now Henderson[4] (in a paper which you mention in your leading article but do not seem to have read to the end) again draws attention to Hunter's priority of description and to the fact that in his clinical teaching John Thomson recognised gargoylism as a disease entity as early as 1908. Doubtless further research will show that Noah had two cases of gargoylism (both sexes being affected) inscribed in the inventory of the ark. In fact, it is just as easy to slip up on eponyms as to say gargoyle when you might (or possibly might not) have wished to say corbel.

In conclusion I might add that it was John Poynton who first aptly compared one case under his care to a gargoyle, and the name gargoylism was adopted in a paper[5] in which it was suggested, on the very meagre pathological data then available, that the condition might prove to be a lipoidosis. This has subsequently been confirmed, but it would be as well to wait until the pathogenesis has been more completely worked out before coining a more permanent and scientific name. If we must be burdened with a further eponym, let it at least be Hunter's lipoidosis.

Rauceby, Lincs. RICHARD W. B. ELLIS.

1. Hurler, G. *Z. Kinderheilk.* 1920, **24**, 220.
2. Cockayne, E. A. *Proc. R. Soc. Med.* 1936, **30**, 104.
3. Hunter, C. *Ibid*, 1917, **10**, 104.
4. Henderson, L. J. *Arch. Dis. Childh.* 1940, **15**, 201.
5. Ellis, R. W. B., Sheldon, W. and Capon, N. B. *Quart. J. Med.* 1936, **5**, 119.

Public Health

Diarrhœa this Winter

EPIDEMICS of diarrhœa, for the most part mild and affecting people of all ages, have appeared this winter in different parts of the country. A questionnaire sent out to practitioners in various districts shows that some epidemics have been associated with catarrhal or influenzal symptoms, others have been purely gastro-intestinal. The Flexner bacillus has been isolated in one or two places and the Sonne bacillus in others, but in many districts no organism has been found even when carefully looked for. No serious results seem to have been noted, apart from one death—that of an elderly debilitated mentally ill patient who contracted diarrhœa, probably due to Flexner dysentery, in Stobhill Hospital.

Mild outbreaks are reported from such widely scattered regions as Northumberland, Lancashire, the Midlands and Devon. Cases have been appearing since December or even earlier, and in most places have persisted into February. The symptoms have ranged from trivial diarrhœa accompanying respiratory catarrh and lasting 24–48 hours to severe diarrhœa or vomiting or both, with sudden onset leading to shock and collapse. Among the Northumbrian cases during the autumn and winter were children with mild diarrhœa, vomiting, and tenderness over the liver; more recently, middle-aged men and women have been affected with acute diarrhœa lasting only 24 hours. In Devon mild diarrhœa with or without vomiting and lasting 3–6 days has been epidemic throughout the same period. These minor types of infection are presumably akin to the respiratory infections which they sometimes accompany, or even perhaps replace. A suggestive case is that of a soldier who developed follicular tonsillitis while on leave; two days later his wife had an attack of vomiting with a rise of temperature but no sore throat, and her sister, called in to nurse them both, developed within a day or two an attack of diarrhœa with nausea, but without vomiting or sore throat. There is at least presumptive evidence that all three infections were due to the same organism. Sporadic cases of diarrhœa only are reported from London and Aberdeen; Sheffield appears to be free. Dysentery organisms have been isolated in connexion with epidemics of diarrhœa in Glasgow, Manchester and Birmingham. The Sonne bacillus has been implicated in Birmingham, where cases have been numerous and the symptoms have been nausea, small bile-stained vomits, headache, colicky abdominal pain, and diarrhœa, the stools occasionally containing blood and mucus. The temperature has not been greatly raised in most cases and the pulse has been slow. In a few cases the spleen has been palpable and in two "rose spots" appeared. The diarrhœa usually lasted only two or three days, but sometimes an acute onset was associated with collapse. In Manchester, where the Flexner bacillus was isolated, the illness lasted about 5 days, and began with abdominal pain and diarrhœa, the stools containing mucus; the temperature was only raised for 48 hours. Another outbreak of Flexner dysentery occurred in Glasgow at Stobhill Hospital and the Maternity Hospital during January. Patients were ill for 2 or 3 days with abdominal discomfort, diarrhœa and occasional vomiting, and a temperature of 100°–103° F. The source of infection was found to be the milk supplied by a farm where there were 10 cases of diarrhœa among farm hands. Milk

was also suspected of being the source of infection in the Manchester epidemic. Notifications of dysentery in England and Wales during this year reflected the same picture, rising almost every week from 69 for the week ending Jan. 4 to 174 (uncorrected total) for Feb. 8–15. The seasonal rise in incidence usually accompanies cold weather, like that of the respiratory infections, and the association of respiratory catarrhs with the present diarrhœa epidemics may therefore be fortuitous.

From the Annual Reports

CARDIFF

The population of the city of Cardiff is practically stationary at 226,000. In 1939 its birth-rate was 15·4 and its death-rate 13·0, giving a natural increase of 219 males and 324 females. As females have a lower death-rate than males at all ages and consequently have a higher expectation of life, the tendency of all populations is to become predominantly female; but as the birth-rate of males is higher than that of females—roughly 106 to 100—it was expected that the saving of life amongst infants and young children would tend to balance the sexes. It has not done so, for though the reduction of mortalities of both sexes has been great, it has been slightly greater of females. Cardiff's infantile mortality was 53 and its maternal mortality 2·6. Like most Welsh cities, tuberculosis is more prevalent in Cardiff than in most English cities; roughly the incidence is 50% higher than in the Lancashire towns, a phenomenon which is not at present explicable. Dr. J. Greenwood Wilson reports 437 cases of diphtheria for the year with 14 deaths, giving a fatality of 3·2%, which is low. He gives an interesting table of the fatality of diphtheria according to the day of the disease on which serum was given. Cases given serum on the first day had no fatality, nor was there any fatality when serum was given on the fifth day or later. In a town in which the infectious disease service is good there will be little fatality in diphtheria cases which fail to obtain treatment until the fifth day, because only in trivial cases, which would get well of themselves, is treatment likely to be so long delayed. The report of the rheumatism supervisory scheme, which has kept going better than most, shows that in the past eleven years 1226 cases of child rheumatism have been treated in hospital. On admission the states of the heart were: normal 142; minor involvement 942; major involvement 160. On discharge they were: normal 710; minor involvement 398; major involvement 118.

From the School Reports

COVENTRY

Dr. A. Massey issued his school medical report for 1940 on Feb. 7, 1941, unexpectedly early for a city which had suffered severely from enemy action. The report is much curtailed, but contains some information on school work during the height of hostilities which is urgently needed. The nutrition of the children was better in 1940 than in 1939, only 4·8% were classed as subnormal and 0·01% as illnourished. There were also fewer children with verminous heads. Until the great air attack of Nov. 14–15 there had been much to and fro movement of the population, but after that there was a definite exodus and of 24,408 children on the elementary-school registers on Oct. 18 only 9419 remained in Coventry at the end of the year. At the clinics 3446 individual children received attention, of whom 11 had ringworm of the scalp, 22 ringworm of the body, 423 scabies, 205 impetigo, 558 septic sores, boils, etc., and 346 verminous heads. Only 4 cases of corneal ulcer and 122 of conjunctivitis were detected. These figures show that neither the nutrition nor the nurture of the children suffered as the result of the war. The insignificant number of cases of corneal ulceration is particularly noteworthy, for in the war of 1914–18 corneal ulceration was very common among elementary-school children in most parts of the country.

Infectious Disease in England and Wales

WEEK ENDED FEB. 22

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 1238; whooping-cough, 3258; diphtheria, 1042; enteric fever, 25; measles (excluding rubella), 14,976; pneumonia (primary or influenzal), 1874; puerperal pyrexia, 151; cerebrospinal fever, 434; poliomyelitis, 9; polio-encephalitis, 2; encephalitis lethargica, 5; dysentery, 202; ophthalmia neonatorum, 76. No case of cholera, plague or typhus fever was notified during the week.

Deaths.—In 126 great towns there was no death from smallpox or enteric fever, 1 (0) from scarlet fever, 34 (0) from whooping-cough, 14 (1) from measles, 31 (1) from diphtheria, 31 (4) from diarrhœa and enteritis under 2 years, and 314 (26) from influenza. The figures in parentheses are those for London itself.

Birmingham and Salford each had 5 deaths from whooping-cough. Fatal cases of influenza were again widely scattered, Manchester reporting 24, Birmingham 23, Bristol and Liverpool each 10, no other great town more than 8.

The number of stillbirths notified during the week was 210 (corresponding to a rate of 41 per thousand total births), including 15 in London.

INCIDENCE OF INFLUENZA

In the week ending Feb. 22, 314 deaths were ascribed to influenza in the great towns, 10 fewer than in the previous week. The age-distribution of the deaths continues to be normal. In the county of London the deaths have decreased from 50 to 26 and hospital admissions for influenza, bronchitis and pneumonia from 526 to 379. The proportion of total deaths coming from the South-Eastern Area (including Greater London) has decreased to 35·2%.

Obituary

SARAH GRAY

F.R.C.S.I., L.R.C.P.E.

AMONGST pioneer medical women Dr. Sarah Gray will have an honourable place. Born in Tipperary 81 years ago she determined on a medical career at a time when, for a woman, such a course was still considered eccentric, if not improper. She studied in London, but London granted no degrees to women, so in 1888 she took the Scottish conjoint qualification. Three years later she settled down in Nottingham, the first woman to undertake general practice in that city. Opposition was bitter, nor was it made less so by her very patent ability. Women doctors were not wanted, except perhaps by women; certainly not by the profession. The first years were bleak and discouraging. Nevertheless, in 1899 she was elected to her first public appointment. At the Women's Hospital, Nottingham, she became assistant surgeon in charge of out-patients, and, as it was then called, chloroformist. Her advent was viewed by most of her colleagues with distrust. For a whole year one of them insisted on being present whenever she administered an anæsthetic, eager to discover and proclaim some negligence or inefficiency. She disappointed him. And worse was to come. She applied for the post of consulting surgeon in charge of inpatients. Her suitability could not be questioned, yet some excuse had to be found for keeping her out. She was told that her qualifications, the highest open to women when she took them, were not high enough. Nothing daunted, at the age of forty, she took her F.R.C.S.I. The opposition was cowed, and in 1902 she became one of the two most highly qualified members of the staff. Stage by stage prejudice was overcome. She became surgeon to the Nottingham and Notts Convalescent Home, medical examiner to the Board of Education and the Nottingham education committee. Where her outstanding ability and her sense of duty failed to convince she carried the day by her warm sympathy, her sense of humour, her volcanic energy, her Irish brogue, or her golden voice. She even mastered the early motor-car.

Hadley, Nottingham

In the year 1921–22 she was elected the first, and up to the present the only, woman president of the Nottingham

and Notts Chirurgical Society. She could, and did, laugh at her early difficulties. She had gained her rightful place. She had many interests in the city where she practised for 37 years. Temperance, foreign missions, rescue work, social reform in all its aspects, were sure of her sympathy and help. She was an eloquent speaker, and contributed articles to the medical press. Her life was rich and full and her loss will bring grief to many.

E. N. B.

Surgeon Lieutenant BEN HAROLD BRINDLE, R.N.V.R., whose death from enemy action is announced, received his medical training at Liverpool University where he graduated in 1938. He became house-surgeon at the David Lewis Northern Hospital, Liverpool, and later resident medical officer at Walton Hospital. His death has been a blow to his colleagues and friends and has robbed the medical profession of a worthy member.

A YEAR'S WORK ON CANCER

INVESTIGATIONS sponsored by the British Empire Cancer Campaign and its affiliated bodies are so diverse that each successive annual report provides a useful indication of the stage reached in the various phases of contemporary cancer research and thought. The report for 1940 is no exception. As usual, much of the scientific information takes the form of brief accounts of work which can be found described at length elsewhere. Nevertheless, the report gives us a clearer perception of the relationships between lines of research which hitherto have seemed somewhat disconnected.

At the Royal Cancer Hospital work on the chemical carcinogens has been continued, but interest seems now to be more focused on substances which aid or hamper the action of carcinogens, or which slow the progress of established malignant disease. The general method is to advance step by step, testing and comparing closely related substances, seeking correlations between chemical structure and biological action, and hoping thus to obtain guidance in the selection of further substances to be produced and tested. Nothing sufficiently high in potency for therapeutic use seems yet to have been discovered. At this same hospital, too, work has been continued on the class of carcinogens—the azo-compounds—which are particularly effective in producing primary cancer of the liver.

Peacock and Beck of the Glasgow Royal Cancer Hospital have found that when 3 : 4-benzpyrene is painted on the skin of a mouse it persists sufficiently long in situ for twice-weekly paintings to constitute continuous application. They find that if a mouse is painted twice a week for a single month only, no tumours develop. They find also that when the applications are discontinued for a long period and then repeated (one month painting, three months rest, one month painting, three months rest, one month painting, unbroken rest) tumours do develop. Thus there is now a cumulative effect showing that even in three months of rest there is not time for complete recovery. What is the change which thus persists for so long a time in the treated cells, or in their descendants? This is the ever-recurring problem of the precancerous state and the genesis of cancer itself. Orr, of the University of Leeds, has studied the initiation of cancer—sarcoma in this case—by histological methods not very different from those which others have used. In the subcutaneous tissues of mice he planted pellets made of wax in which a carcinogenic hydrocarbon had been incorporated. At first the reaction differs little from that commonly seen in the presence of foreign bodies in general, except that a firm capsule is not formed round the pellet. At a later stage cells of types associated with chronic inflammation appear at a little distance from the pellet, and it seems, so Orr thinks, that the sarcoma emerges as a further stage in some of these cells, in particular the histiocytes. This is one more opinion in favour of the view that the histiocyte is the parent cell of sarcomas. Some workers have regarded the more mature cell, the fibroblast, as the parent cell.

Work with carcinogenic hydrocarbons and substances of similar nature has been open to the objection that since these substances are not known to occur naturally in the body it is unsafe to assume that their mode of action has anything to do with processes which do take place in the body. This objection has now been removed in part. Cook, Kennaway and Kennaway of the Royal Cancer Hospital, confirming a brief statement made by Vittorio Ghiron, have found that deoxycholic acid, a constituent of human bile with a chemical constitution close to that of some of the synthetic carcinogenic hydrocarbons, is active, though not highly so, in producing tumours when injected into the subcutaneous tissues of mice. Perhaps we may now anticipate the discovery of other related substances in the body under natural conditions. Such a view is strengthened somewhat by the discovery, made by Warren and Goulden, that 9 : 10-dimethyl anthracene has carcinogenic properties. So far, this substance is the simplest of the group to be proved carcinogenic and its significance lies in the fact that with each extension of the range of chemical constitution over which the carcinogens are known to exist one sees an increased possibility of finding kindred substances in the body.

It is now highly probable that some of the tumours which appear in man under what may be called natural conditions, may arise by a process the same as that which follows the exhibition of a synthetic hydrocarbon, but can it be assumed that all are thus formed? In fact, we are asking whether cancer is always produced in the same way. The question is raised again by the announcement by Bonser of Leeds that when carcinogenic hydrocarbons are injected under the skin of mice they may induce mammary carcinomata at the site of inoculation. This is in agreement with an observation made by Foulds who produced a similar tumour in a hamster by the local action of thorotrast. Does this mean that the mechanism of tumour production by the non-specific and strictly local action of chemical and physical agents is here exactly the same as the mechanism by which similar tumours are produced by the ovarian hormone œstrone, which is tissue-specific and acts on mammary tissue even if injected at some distant site?

Dodds and his colleagues at the Middlesex Hospital have studied the chemical configuration of organic compounds which are capable of inducting œstrus. They have produced and tested many new substances and are trying to correlate chemical structure with œstrogenic action. The work is important in relation both to cancer and to general hormone therapy.

Also at the Middlesex Hospital, McIntosh and his colleagues have prepared washed virus of the Rous fowl sarcoma No. 1 and by the same method, have prepared washed products from two chemically-induced fowl tumours which are not filtrable. Careful chemical analyses have been made. As far as the results go, it is found that the virus of the Rous sarcoma is similar in chemical composition to other viruses such as vaccinia which has been shown to be associated with a fatty envelope. The results show also that the two non-filtrable tumours—and by inference, possibly others—contain particles which are the same size and composition as the Rous virus.

Clinical aspects of cancer are not being neglected. At St. Mark's Hospital, Dukes has analysed the laboratory records of 1000 cases of cancer of the rectum. He finds that in rectal cancer evidence of extension along the lumen of the hæmorrhoidal veins is present in some 18% of all operation specimens. In his opinion histological grading is a useful method of subdividing carcinomas of the rectum because it may indicate the extent of local spread. At the Marie Curie Hospital biopsy for histological diagnosis is the rule, and attempts have been made to find some relationship between histological type and ultimate prognosis. In uterine tumours no such relationship has been detected. It is curious that we still fail to see in the histological picture of cancers any accurate guide to the clinical course which an individual tumour will take.

In therapeutics much work has been done in relation to dosage, mode of application and clinical effects of rays and radium. In the past, distressing and prolonged general symptoms have been apt to follow administration of large does of X rays. It is hoped that in future such consequences may be minimised; workers in the physical department of the Royal Cancer Hospital conclude that the total dose absorbed by the patient should be considered and not simply the dose received at a particular point in the tissues.

Medical News

University of Cambridge

On March 1, the degree of M.A. was conferred on Dr. L. H. Aitken, university demonstrator in anatomy. The following degrees were also conferred by proxy:—

M.B., B.Chir.—W. W. Brigden, C. E. Watson, S. C. Gold, and F. A. Whitlock.

A meeting of the Tuberculosis Association will be held at 26, Portland Place, London, W.1, on Saturday, March 15, at 10.30 A.M. Dr. W. E. Snell will read a paper on senile tuberculosis and Dr. F. T. Clive is to open a discussion on current topics.

On Thursday, March 13, at 2.30 P.M., at 17, Bloomsbury Square, London, W.C.1, Mr. H. Berry, A.I.C., dean of the college of the Pharmaceutical Society of Great Britain, will address the society on recent developments in pharmaceutical practice.

On Friday, March 28, Mr. J. B. Hunter will deliver a lecture to the Halton Medical Society on chest injuries in war-time. On May 2, Prof. L. J. Witts will speak on pathology in war-time.

At a meeting of the section of neurology of the Royal Society of Medicine on Wednesday, March 19, at 2.30 P.M., Dr. A. H. Robb-Smith, Dr. Dorothy Russell, Dr. J. G. Greenfield, and Dr. A. H. Hunt will open a discussion on fat embolism and the brain. On March 21, at 3.30 P.M., at the section of radiology Dr. F. C. Golding will be the opener in a discussion on tuberculosis of the knee-joint. On March 28, at 2.30 P.M., Surgeon Rear-Admiral Sheldon Dudley and Surgeon Commander W. G. C. Fitzpatrick will read a paper on the epidemiology of pulmonary tuberculosis in the Royal Navy and the use of miniature radiography in its elucidation.

The home of Lord and Lady Melchett, Colworth House, Sharnbrook, near Bedford, was opened on March 1 as a rest home for London's voluntary hospital nurses. The hon. secretary of the home is Mr. Charles Power, and any inquiries may be addressed to him at Westminster Hospital, St. John's Gardens, London, S.W.1.

This year the voluntary hospitals of London are once more combining to hold street collections on May 6 and Oct. 7. Offers of help should be sent to the headquarters of the London Hospital Street Collection Central Committee, 36, Kingsway, W.C.2. Last year, in spite of difficulties, over £46,000 was collected in this way.

Ripley Court, an eighteenth-century country house in Surrey, has been taken over by Westminster Hospital as a maternity home and teaching centre, in conjunction with the Surrey county council, which has reconditioned the house, and the Westminster city council antenatal clinics. Westminster Hospital is providing equipment for a unit of 25 beds, with medical and nursing staff.

In a recent casualty list Lieutenant A. R. C. Margetts, M.R.C.S., R.A.M.C., is reported wounded.

Surgeon Lieutenant William Boyd, M.B. Glasg., R.N., and Probationary Temporary Surgeon Lieutenant H. F. Sloan, M.B. Dubl., R.N.V.R., have been posted as missing presumed killed, and also Surgeon Lieutenant F. H. Williams, L.M.S.S.A., R.N., previously reported missing. Temporary Surgeon Lieutenant A. P. B. Waind, D.S.C., M.B. Leeds, R.N.V.R., who was also previously reported missing is now known to be a prisoner of war. Temporary Surgeon Lieutenant M. R. J. Behrendt, M.B. Edin., R.N.V.R., and Probationary Temporary Surgeon Lieutenant R. G. S. Whitfield, M.R.C.S., R.N.V.R., are posted as among the injured and wounded.

During the seventeenth year of the Ella Sachs Plotz Foundation for the advancement of scientific investigation eighty-one applications for grants were received by the trustees, of which fifty-one came from the United States, the other thirty coming from fifteen different countries in Europe, Asia, and North and South America. The total number of grants made during the year was twenty-three. Grants are made to researches on problems in medicine and surgery or in branches of science bearing on medicine and surgery. They may be used for the purchase of apparatus and supplies that are needed for special investigations, and for the payment of unusual expenses incident to such investigations, including technical assistance, but not for providing apparatus or materials which are ordinarily a part of laboratory equipment. Stipends for the support of investigators are granted only under exceptional circumstances. The maximum grants will usually be less than $500, and applications for the year 1941–42 should be sent before April, 1941, to Dr. Joseph C. Aub, Collis P. Huntington Memorial Hospital, 695, Huntington Avenue, Boston, Mass., U.S.A.

Queen Mary has consented to become a president of Bethlem Royal Hospital.

The Tata Memorial Hospital for the treatment of cancer has recently been opened in Bombay. The hospital has been built out of funds provided by the Sir Dorabji Tata Trust.

Since publication of the last list of subscriptions to the Medical War Relief Fund £880 has been received, bringing the total to over £18,000.

The Royal Northern Hospital, Holloway, has received, through the American organisation "Bundles for Britain," 30,000 dollars to maintain the operating theatres and X-ray department for six months.

CORRIGENDUM.—In the article by Mr. D. K. Hill on the determination of blood-volume in shocked patients (THE LANCET, Feb. 8, 1941, p. 177) the last two lines of the calculation should read as follows:

$$(BV_x \times Hb_1) + (x \times Hb_2) = (BV_x + x) \times Hb_3$$

$$BV_x = \frac{x(Hb_3 - Hb_2)}{(Hb_2 - Hb_1)}$$

Appointments

CUSACK, ANNYS M., M.B. Lond., D.P.H.: asst. school M.O. for Leicester.
PETERS, L. B., M.B. Durh.: asst. school M.O. for Leicester.
JAKUBOVIC, K., M.D. Prague: R.S.O. at Manchester Victoria Memorial Jewish Hospital.
MCCURRICH, H. J., M.S. Lond., F.R.C.S., M.R.C.O.G.: temp. hon. general surgeon to Worthing Hospital.
BURGE, H. W., M.B. Lond., F.R.C.S.: R.S.O. at the Radcliffe Infirmary, Oxford.
MAR, J. G., M.D. Manitoba, D.T.M. & H.: R.S.O. at Montagu Hospital, Mexborough.
CAMERON, J. S., M.B. Glasg.: asst. county M.O.H. for Gloucestershire.
BIDEN-STEELE, KARL, M.D. Lond., D.P.H.: an inspector of factories.
CROWTHER, J. W., M.B. Lpool, examining surgeon under the Factories Act 1937 for Stretton, Cheshire.

Births, Marriages and Deaths

BIRTHS

BARWELL.—In Vancouver, the wife of Dr. Alan Barwell, Colonial Medical Service, Hong-Kong—a daughter.
COPLANS.—On Feb. 23, at Whitchurch, near Tavistock, the wife of Surgeon Lieutenant Robert Coplans, R.N.—a daughter.
DUNLOP.—On Feb. 23, at Steeple Bumpstead, Essex, the wife of Dr. J. E. Dunlop—a son.
FAWDRY.—On Feb. 27, at Famagusta, Cyprus, the wife of Dr. A. L. Fawdry—a son.
GOODWILLE.—On Feb. 23, at Attleborough, Norfolk, the wife of Major G. M. Goodwille, R.A.M.C.—a son.
LEWIS.—On Feb. 24, in Edinburgh, the wife of Surgeon Lieut.-Commander B. S. Lewis, R.N.—a son.
MARSHALL.—On Feb. 28, at Cheltenham, the wife of Dr. A. G. Marshall—a daughter.
MYLECHREEST.—On Feb. 23, at Eyam, Derbyshire, the wife of Lieutenant W. H. Mylechreest, R.A.M.C.—a daughter.

MARRIAGES

DRYSDALE—RITTER.—On Feb. 27, at Addington, Surrey, Ivor McNeil Drysdale, M.B., surgeon lieutenant, R.N., to Anne Beryl Ritter.
LEVITT—WILSON.—On Feb. 14, at Blackpool, Harry Natalie Levitt, L.M.S.S.A., lieutenant R.A.M.C., to Joan Diana Wilson.
NASH—ALLEN.—On Feb. 24, at Newcastle, co. Down, Henry Kinsey Gifford Nash, M.R.C.S., major R.A.M.C., to Joscelyne Allen.
PRICE—KYDD.—On Feb. 24, at Swansea, John Eric Price, L.R.C.P.E., surgeon lieutenant R.N., to Mary I. J. Kydd.
SOUTHWELL—DECK.—On March 1, in London, Neville Southwell, M.B., to Elizabeth Deck.

DEATHS

BANKS.—On Feb. 25, Robert McLachlan Banks, M.B. Glasg., D.P.H., of Bournemouth, aged 77.
CANNEY.—On Feb. 27, at Bexhill, Henry Edward Leigh Canney, M.D. Lond., D.P.M.
COCK.—On Feb. 22, at Exmouth, Charles James Edward Cock, M.R.C.S., surgeon captain R.N. retd., aged 68.
DIXON.—On Feb. 24, Henry Edward Dixon, M.R.C.S., of Buntingford, aged 92.
NESS.—On March 1, at Iver, Bucks, Thomas Matheson Ness, M.D. Edin., late of Bedford Court Mansions, W.C.
ORR.—On Feb. 26, at Salisbury, William Robert Orr, M.D. R.U.I., of East Finchley.
POLLOCK.—On Feb. 25, Richard Gordon Pollock, M.R.C.S., of Hove, aged 76.
ROSS.—On March 3, Thomas Arthur Ross, M.D. Edin., F.R.C.P., aged 65.

Notes, Comments and Abstracts

SERPENT IN EIRE

A BILL for a hospital bed bureau drafted by the government of Eire came in for warm criticism at a meeting of Dublin College Historical Society,[1] a body which it seems likes to deal with history as it comes. Prof. Henry Moore, who took the chair, said that as a consequence of state supervision of the sweepstakes government departments had found themselves in a position to control policy in the Irish voluntary hospitals. They had attempted to found a municipal hospital to the detriment and possible extinction of the voluntary hospitals, but fortunately this attempt had been defeated. The new draft for the establishment of the bed bureau seemed to him to represent state control, naked and unashamed. At the possibility of this serpent rearing its head again, Professor Moore must have felt all the warmth of a St. Patrick, for he spoke of a fierce combat taking place behind the scenes, from which the bill escaped with its sting drawn. The belief that the enemy was now innocuous was shaken, however, when it emerged again "in a new but transparent disguise." Under the text of the bill a doctor who wished to take either a paying or a non-paying patient into his own hospital could only do so through the bureau; the bureau officials might send the patient to a different hospital if they wished, leaving the doctor no redress. He believed that if the bed bureau regulations were not amended to protect the voluntary hospitals from state control the hospitals themselves would withdraw from participation in future sweepstakes; and, for his part, if the sweepstakes meant state control he was utterly opposed to them. A motion disapproving of sweepstakes was introduced by Mr. T. H. Lyle; Mr. R. J. Monaghan, who seconded him, remarked that sweepstakes afforded a convenient way of gambling in a country where every small town had half a dozen public houses, a police station and a bookmaker's office. Mr. A. Lieven and Mr. J. N. Ross favoured sweepstakes, which had, after all, benefited virtually every large hospital in the country, but the motion condemning these characteristically Irish institutions finally won by a short head.

CHITS FOR THE CIT

IT is certainly more difficult to be a creditable citizen today than in John Gilpin's times, for a body of confusing legislation has sprung up overnight, and we find it difficult to know what we ought to do or to discover which authority now regulates which department of our disordered lives. But if anyone is worried about the activities of youth, barrage balloon breakaways, control of cameras, destruction of rats, or nearly a thousand other subjects, and above all the great labyrinth of A.R.P. rules and regulations he will find the answers to his questions neatly codified in the second edition of "Citizens Advice Notes"—a digest of useful information of a social and domestic nature as it affects the life of the man in the street, it is modestly called. The book may now be had from the National Council of Social Service (26, Bedford Square, London, W.C.1) on a subscription basis. The notes will be kept up to date by monthly supplements and the cost of this service is 10*s*.

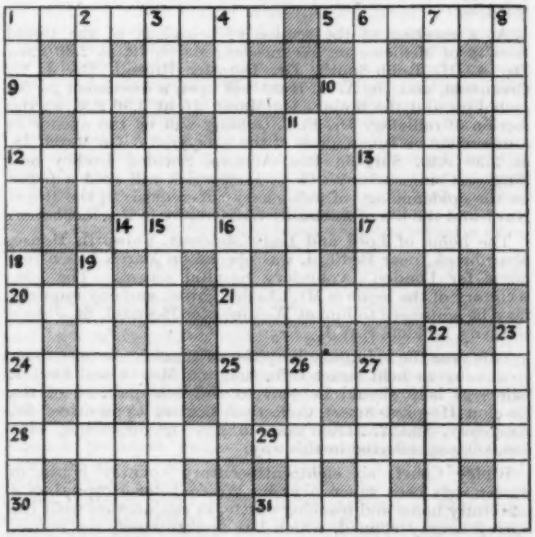
CONSTRUCTION AND RECONSTRUCTION

IN a period allotted to the old human game of breaking things down, it is pleasant and reassuring to take up the annual report of the Commonwealth Fund [2] and see how the builders are getting on. The fund has always kept a generous eye on the growing child, here as well as in the United States, and an account of the progress of work in mental hygiene in Great Britain since the outbreak of war has a special interest. Two definitions from another part of the report lend point to the record. A growing child is "an island of humanity almost entirely surrounded by parents," and a parent is "a relatively adult human being in a tight place." To this we can add the picture of the child as an island transported to strange seas, and the parent remaining behind in a tight place of a different kind. To the agreeable surprise of the directors of the fund, the work of child guidance, though recent in origin and still only slightly developed, has not gone under with the war. The Child Guidance Council during the past year has worked with other bodies, including the Joint Mental Health Emergency Committee, to maintain the training of mental health workers by the London School of Economics, now at Cambridge. Mrs. St. Loe Strachey's Book, "Borrowed Children" [3] has been republished by the fund in the United States. The difficulties of transplanted children have been met in some places with misunderstanding and lack of interest, in others by the establishment of child-guidance clinics, and by a spread, through the council, of workers trained in the care of difficult children. All the older provincial clinics are open, and the Government has granted £3600 to the emergency committee to further the work of mental health. The report suggests that the war may have had the unforeseen effect of accelerating the progress of mental health services in Great Britain.

1. Reported in the *Irish Times*, Feb. 20.
2. Twenty Second Annual Report of the Commonwealth Fund, 1940. New York.

3. Reviewed in our columns on August 10, 1940, p. 183.

LANCET CROSSWORD



ACROSS

1. Characteristic of blue babies (8).
5. See 16 down.
9. Compound produced by a chemical change of plan (8).
10. Filled (or emptied) by a pump (6).
12. Simpler state to the chemist than the physicist (9).
13. There or thereabouts (5).
14. Gives a decided thrill when taken with water (6).
17. "Tout ——, tout casse, tout passe." (5).
20. Lacking this you are a mere coelenterate (5).
21. My riddle includes addition (6).
24. The way you get your teeth (5).
25. This kind of helper is often willing (9).
28. Confusion concerning the old (6).
29. Chink, not necessarily Asiatic (8).
30. Can follow shelter legs (6).
31. Diversion in dressing (8).

DOWN

1. They usually settle the patient one way or the other (6).
2. Always so positive (6).
3. Feeling Fröhlichsome ? (5).
4. Just two eyes and a dot (5).
6. Puts the lid on the island (9).
7. S.O.S. (8).
8. Vaults (8).
11. No longer alarms (6).
15. Lunch with the Colonial team ? (three words, 1, 4, 4).
16 and 5. Heartsick Latin (two words, 6, 6).
18. Withdraw the fluid from the angry serpent (8).
19. Leader of twelve (two words, 5, 3).
22. "Make assurance double sure" (6).
23. Turn to for a popular appeal (6).
26. Knobs on his nibs (5).
27. A fine fat 10 (5).

The Index and title-page to Vol. II, 1940, which was completed with the issue of Dec. 28, is now ready. A copy will be sent gratis to subscribers on receipt of a postcard addressed to the Manager of THE LANCET, 7, Adam Street, Adelphi, W.C.4. Subscribers who have not already indicated their desire to receive indexes regularly as published should do so now.